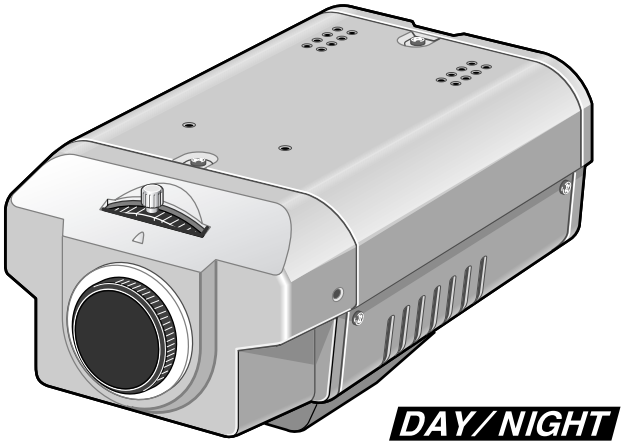
SANYO

INSTRUCTION MANUAL

VCC-WB4000P

Network Camera



About this manual

Before installing and using this unit, please read this manual carefully. Be sure to keep it handy for later reference.

Contents

Precautions 2
Features 3
Accessories 3
Operating environment 4
Name and Function of Each Part 5
Attaching the Lens 7
Flange Back Adjustment 8
Connections 9
- ■ Basic Connections 9
- ■ Connecting to a LAN 10
- ■ Connecting to the Internet 10

Network Camera (Wired LAN) Settings 11
- 1 Installation of Plug-in Software to the Computer 12
- ■ Browser Settings 14
- ■ Cookie Settings 14
- 2 Wired LAN Settings 15
- ■ Initial Camera Screen 16
- 3 NETWORK SET Settings 20
- ■ Changing a password 21
- ■ Viewing Live Images Without Typing In a Username or Password (ID1 only) 22
- ■ Changing the Access Level (ID2 or ID3) 22
- ■ Access Level Settings 23

CLOCK SET Settings 24
CAMERA Settings 25
- ■ Setting the camera title 27
- ■ DAY/NIGHT Settings 27

Alarm Settings 32
- ■ ALARM BUFFERING SET Setting 34
- ■ External Alarm Sensor Setting 35
- ■ MOTION DETECTOR SET Settings 36
- ■ External Alarm Sensor and Motion Detector Settings 37
- ■ Motion Detector Level Sensitivity Setting 38
- ■ Remote Alarm Operations 38
 - A Alarm Output for a Specified Period 38
 - B Continuous Alarm Output 39
- ■ Alarm Detection and Recording 40
 - A Using Only Post-alarm Recording 40
 - B Pre-alarm/Post-alarm Recording 40
- ■ Recording New Alarm Data 41
- ■ Fixed Settings During Pre/Post-Alarm Recording 41
- ■ Saving to an Expansion Memory Card 42

Viewing Live Images 43
- ■ Viewing the View Frame Screen 44

Playing Back Alarm Data 45
- ■ Playing Back Alarm Data in the Camera's Internal Memory 45
- ■ Descriptions of Alarm Operation Buttons 45
- ■ Playing Back Expansion Memory Card Images 46
- ■ Playing Back Alarm Images Stored in a Computer 46
- ■ Descriptions of Alarm Operation Buttons for Saving Data to a Computer 47
- ■ Alarm Data Deleting 48

Saving Live Images and Alarm Images 49
- ■ Saving Live Images onto a Computer 49
- ■ Saving Alarm Images onto a Computer as Still Images 49
- ■ Saving All of a Single Alarm Event onto a Computer 50

WIRELESS LAN SET Settings 51
- ■ Camera Wireless LAN Settings 52
- ■ Description of WIRELESS LAN SET Screen 53
- ■ Encipherment Settings 53

PPP (Dial-up) Settings 54
- ■ PPP Connection to an Internet Service Provider 54
- ■ PPP Connection from a Computer 57

RS-232C Settings (RS-232C SET) 59
LANGUAGE Selection 59
STATUS Checking 60
Glossary of Terms 61
Troubleshooting 64
- ■ If the camera cannot be connected 64
- ■ If you forget the IP Address 64

Specifications 65

Precautions

In case of problem

Do not use the camera if smoke or a strange odour comes from the unit, or if it seems not to function correctly. Disconnect the power cord immediately, and consult your dealer (or a Sanyo Authorized Service Centre).

Do not open or modify

Do not open the cabinet, as it may be dangerous and cause damage to the unit. For internal settings and repairs, consult your dealer (or a Sanyo Authorized Service Centre).

Do not put objects inside the unit

Make sure that no metal objects or flammable substance get inside the camera. If used with a foreign object inside, it could cause a fire, short-circuits or damages.

If water or a liquid gets inside the camera, disconnect the power cord immediately, and consult your dealer (or a Sanyo Authorized Service Centre). Be careful to protect the camera from rain, sea water, etc.

Be careful when handling the unit

To prevent damages, do not drop the camera or subject it to strong shock or vibration.

Install away from electric or magnetic fields

If installed close to a TV, radio transmitter, magnet, electric motor, transformer, audio speakers the magnetic field they generate will distort the image.

Protect from humidity and dust

To prevent damages to the camera, do not install it where there is greasy smoke or steam, where the dampness may get too high, or where there is a lot of dust.

Protect from high temperatures

Do not install close to stoves, or other heat generating devices, such as spotlights, etc., or where it could be subject to direct sunlight, as that could cause deformation, discoloration or other damages.

Be careful when installing close to the ceiling, in a kitchen or boiler room, as the temperature may raise to high levels.

Install where the temperature range will stay between –10°C and 50°C. (no condensation)

Cleaning

- Dirt can be removed from the cabinet by wiping it with a soft cloth. To remove stains, wipe with a soft cloth moistened with a soft detergent solution and wrung dry, then wipe dry with dry soft cloth.
- Do not use benzine, thinner or other chemical product on the cabinet, as that may cause deformation and paint peeling. Before using a chemical cloth, make sure to read all accompanying instructions. Make sure that no plastic or rubber material comes in contact with the cabinet for a long period of time, as that may cause damage or paint peeling.

Features

Web Server Function

This camera is equipped with a web server function. The camera can be accessed using a computer's web browser in order to view the camera images. In addition, up to a maximum of 16 users can simultaneously access a single camera on the network.

Network Connections

This camera is equipped with both an Ethernet connector and an RS-232C connector, allowing it to be connected to a variety of different network environments, such as LANs and the Internet.

Wireless LAN Compatibility

The camera can also be used in a wireless LAN environment by installing the specified wireless LAN card.

Adoption of JPEG2000

The images captured by the camera are compressed using the JPEG2000 format before transmission. In comparison to conventional JPEG formats, this format produces very little image deterioration and allows large volumes of data to be transmitted quickly (maximum 30 fps).

Note: The transmission rate will vary depending on individual network conditions.
A network environment that can transmit data at high speeds is required in order to transmit data at 30 fps.

Alarm Recording and Playback Functions

The built-in motion sensor detects movement, and the camera can also be connected to an external alarm sensor (such as a switch) that is set to detect abnormalities, so that images can be recorded and played back when an alarm occurs.

Day/Night Function

The day/night function allows the camera to adapt to a variety of different luminance conditions so that color images are monitored during daytime, but under conditions of low illumination such as nighttime, it switches automatically to black & white.

Accessories

① Setup CD-ROM 1 pc.
② Lens iris plug (4-pin). 1 pc.
③ Ferrite core. 2 pc.

Operating environment

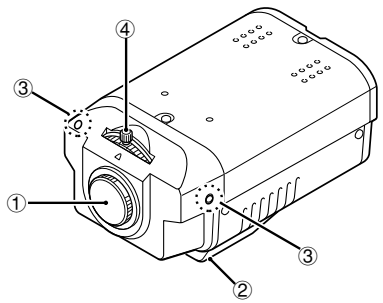
The camera requires the following conditions to operate.

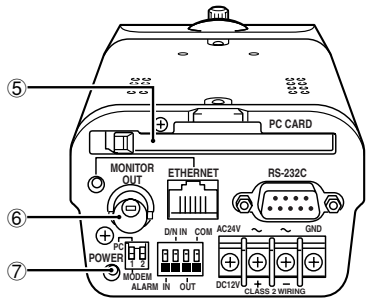
- **OS:** In this manual, the Microsoft® Windows® 98 operating system, the Microsoft® Windows® Millennium Edition operating system, the Microsoft® Windows® 2000 operating system and the Microsoft® Windows® XP operating system are all referred to as Windows.

 Microsoft and Windows are trademarks, or registered trademarks of Microsoft Corporation in the United States and/or other countries.
- **CPU:** Intel® Pentium® III 800 MHz or higher or similar with equivalent speed capacity (Pentium® 4 2 GHz recommended)

 Intel and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.
- **Memory:** 128 MB or more (256 MB or more recommended)
- **Drive:** CD-ROM drive
- **Network card:** 10Base-T / 100Base-TX
- **Protocols:** TCP/IP, PPP, FTP, HTTP
- **Browser:** Microsoft Internet Explorer 5.5 SP2 or later
- **Computer monitor display size of 1024 x 768 pixels or greater**

Name and Function of Each Part





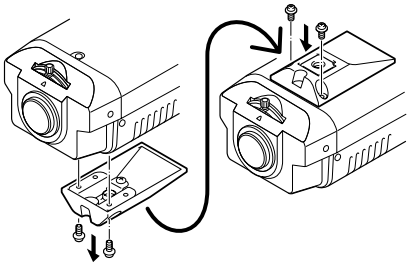
① **Lens mount cap**

Attach this cap to protect the lens mounting section. When using the camera, remove the cap and attach the automatic iris-type lens (sold separately).

② **Camera mounting bracket**

This bracket can be installed to either the top or bottom of the camera as desired. When changing the position of the camera mounting bracket, you should always reuse the screws that have been removed.

Note: If using a camera mounting bracket (sold separately), select a location that is strong enough to bear the full weight of the camera and the mounting bracket for long periods, and install the camera and mounting bracket securely.



③ **Flange back locking screws (p. 8)**

④ **Flange back adjustment dial (p. 8)**

⑤ **PC CARD slot**

Use this slot to insert a memory card or wireless LAN card.

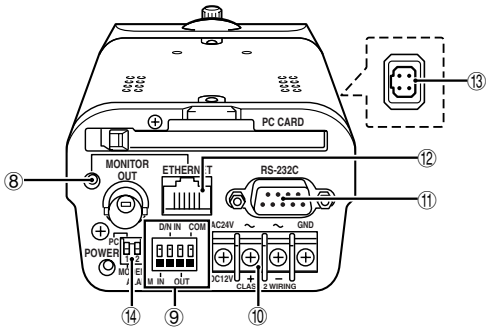
Note: Make sure that the camera's power is turned off before inserting the card.

⑥ **MONITOR OUT connector**

When setting up the camera, use this connector to connect the camera to the video connector (VIDEO IN) of a monitor for adjusting the angle of view and focus.

⑦ **POWER indicator**

This indicator illuminates when 24 V AC or 12 V DC is being supplied to the power input terminals of the camera.

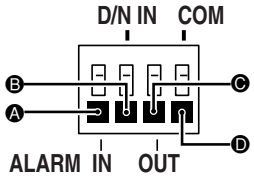


⑧ Link indicator

This indicator illuminates when the camera is connected to a network. It flashes while data transmission is in progress.

The indicator switches off when the camera is connected to a wireless LAN.

⑨ Alarm/D/N (Day/Night) terminals



Ⓐ ALARM IN terminal (IN)

Connect this terminal to an infrared sensor or similar use in external detection of intruders.

Ⓑ D/N IN terminal (D/N IN)

This can only be used when COLOR mode is set. A device such as an infrared sensor can be used to automatically switch between color images and black & white images.

Ⓒ ALARM OUT terminal (OUT)

Connect this terminal to a buzzer or lamp that is used to warn when an alarm is detected by means of motion sensor or alarm input. In addition, when the day/night function (COLOR mode or TIMER mode) is being used, an IR lamp or other device can be made to illuminate when monitoring switches to black & white images. (Output rating: 18 V, 25 mA)

Ⓓ Ground terminal (COM)

⑩ Power supply input terminals (AC24V, DC12V, GND)

⑪ RS-232C connector

Use this connector to connect the camera to a modem for transmission of data along telephone lines, or for connecting the camera to a computer.

Use the **PC/MODEM** select switch to change the camera operation between modem and computer operation.

⑫ ETHERNET connector

Use this connector to connect the camera directly to a computer or to a network. Use a 10Base-T or 100Base-TX (Category 5, UTP) cable to make the connection.

⑬ Lens iris output connector

Connect this connector (4-pin socket) to the lens iris plug of the automatic iris-type lens (sold separately).

⑭ PC/MODEM select switch

Use this switch to set the function of the RS-232C connector when connecting the camera directly to either a modem or computer.

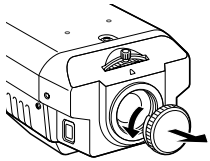
Note:

- Make sure that the camera's power is turned off before setting the function of the RS-232C connector.
- Using the RS-232C connector to connect the camera to a computer is only done for service purposes. You should not use the PC/MODEM select switch yourself.

Attaching the Lens

Use a DC-type automatic iris-type lens (sold separately).

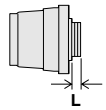
1 Remove the lens mount cap.



2 Attach the CS mount-type lens.

Note:

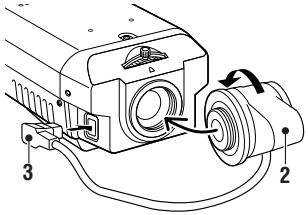
The "**L**" part of the lens should be 5 mm or less in length. If a lens that does not conform to this standard is used, it will not be possible to attach the lens correctly.



Gently screw the lens into the camera.

The following automatic iris-type lenses can be used.

- VCL-CS8LY (standard, f = 8 mm)
- VCL-CS4LY (wide angle, f = 4 mm)
- VCL-CS2LY (extra wide angle, f = 2.8 mm)

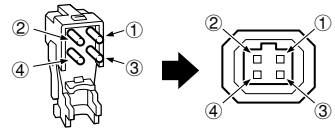


For C mount type

In order to allow correct adjustment of the flange back, attach the C mount adapter ring (option) to the lens before attaching the lens to the camera.

3 Connect the lens iris plug to the lens iris output connector of the camera.

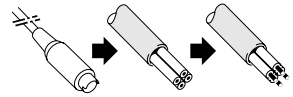
① (–) control coil ③ (+) drive coil
② (+) control coil ④ (–) drive coil



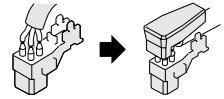
(Connecting to the lens iris plug)

Lenses from other manufacturers may have different plug shapes and specifications. In such cases, you may need to rewire the lens iris plug.

① Cut off the plug of the lens cable, cut off approximately 8 mm of the insulation, and then strip the ends of the cable sheaths leaving approximately 6 mm of sheath intact.



② Solder the ends of the cable wires to the ends of the pins, and then attach the cover of the lens iris plug.



Flange Back Adjustment

The flange back is the distance between the lens (sold separately) and the image capturing surface of the camera. It is adjusted at the time of shipment from the factory to accommodate the types of lenses that are generally assumed to be in use.

Accordingly, the flange back does not normally need to be adjusted. However, if attaching a zoom lens and changing from wide angle to telephoto, the images may not be captured in proper focus, and so in such cases the flange back should always be adjusted by following the procedure given below.

1 **Connect a coaxial cable between the camera output connector (MONITOR OUT) of the camera and the monitor's video connector (VIDEO IN).**

2 **Turn on the camera's power.**

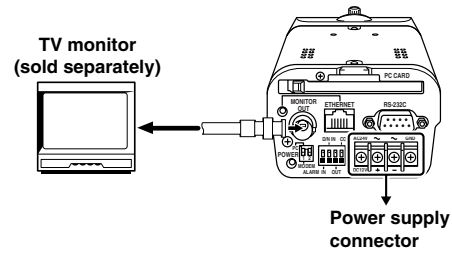
Adjust the flange back while viewing the camera images on the monitor.

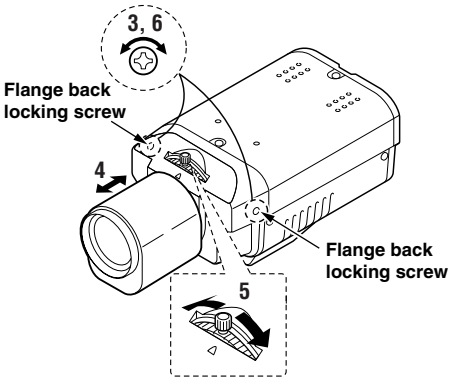
3 **Use a Phillips screwdriver to loosen the flange back locking screws.**

4 **Move the zoom lens to the telephoto setting, and then use the lens focus ring to adjust the focus.**

5 **Move the zoom lens to the wide angle setting, and then use the flange back adjustment dial to adjust the focus.**

6 **Move the zoom lens from wide angle to telephoto (repeating steps 4 and 5) and check that the images are properly focused. Then tighten the flange back locking screws.**





Connections

Turn off the power for all equipment before making any connections.

Basic Connections

1 Connect the camera to a computer.

Connect a cable between the ETHERNET connectors of the camera and the computer.
Use a crossed wire-type Ethernet cable.

2 Connect the power supply.

After connecting the power supply, install the supplied ferrite core **A** to the power cord.

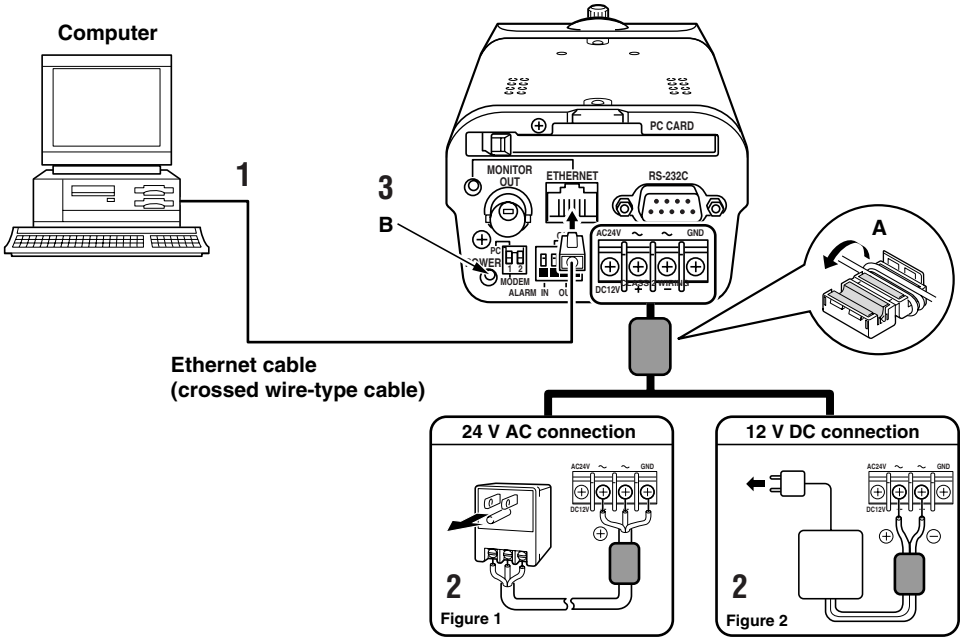
- If using a commercially-available 24 V AC adapter, always be sure to connect the ground wire (18AWG or higher) to the ground terminal. (**Figure 1**)
- If using a 12 V DC power supply (sold separately: DSA-0151CD-12J), make the connections as shown in **Figure 2**.

Note:

- In order to avoid any problems with the camera and the power supply, take sufficient care to ensure that the polarities are correct when connecting the power supply.
- When the accessory ferrite cores are attached, they will increase the load on the cable, so after doing the installation, adjust the cable accordingly.

3 Insert the power cord plug into a wall outlet.

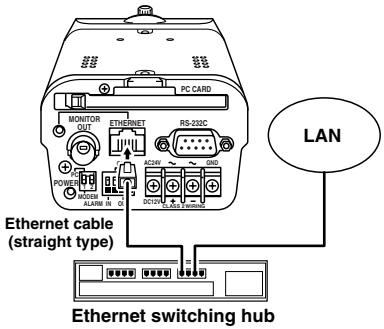
The POWER indicator **B** will illuminate.



Connecting to a LAN

Use an Ethernet cable to connect the ETHERNET connector of the camera to the LAN's Ethernet switching hub.

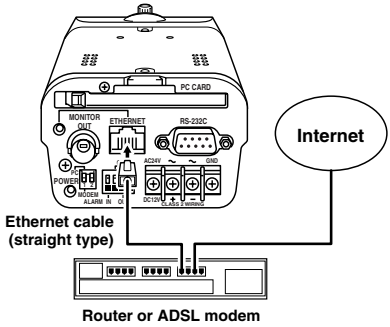
☞ Use a **straight-type** Ethernet cable.



Connecting to the Internet

Use an Ethernet cable to connect the ETHERNET connector of the camera to a device such as a router or ADSL modem that is connected to the Internet.

☞ If connecting to a router, use a **straight-type** Ethernet cable. If connecting to an ADSL modem or to some other type of device, refer to the documentation provided with the device for details on what type of connection method should be used.



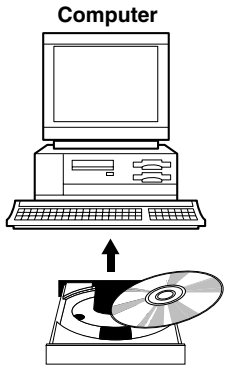
Network Camera (Wired LAN) Settings

In order to use the camera as a network camera, you must make the following settings in the order given.

1 **Installation of Plug-in Software to the Computer (p. 12)**

Insert the contents of the supplied setup CD-ROM to the computer.

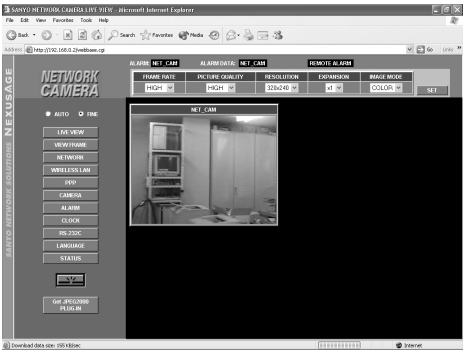
Note: The same setup CD-ROM is supplied with both the network camera and the network video server. You can use either CD-ROM to carry out the installation.



2 **Wired LAN Settings (p. 15)**

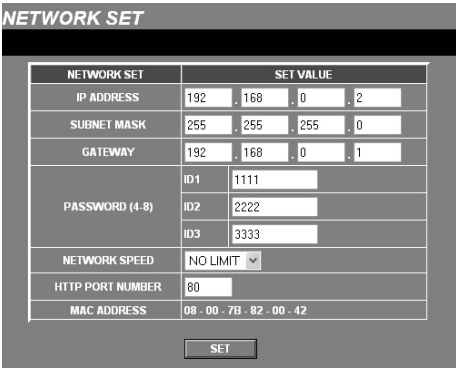
Connect an Ethernet cable between the camera and the computer and then make the required initial settings such as the computer IP address, user name, password and language.

When these settings are completed, the initial camera screen will be displayed. This section gives descriptions of the various parts of the initial screen for you to refer to.



3 **NETWORK SET Settings (p. 20)**

This screen lets you carry out operations such as setting access levels (Administrator, Operator or User) and changing passwords.



1 Installation of Plug-in Software to the Computer

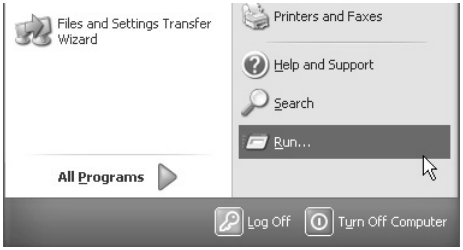
Install the plug-in software (on the setup CD-ROM) onto the computer that is to be used. Installing the plug-in software makes it possible to view live images from network cameras using the computer's web browser.

1 Turn on the power for the computer.

After Windows has loaded, continue to the next step.

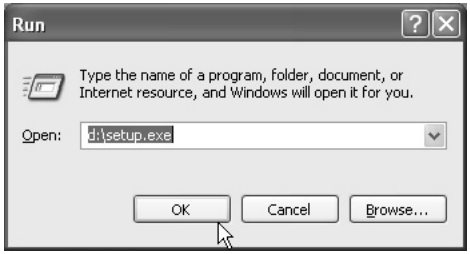
2 Insert the setup CD-ROM into the CD-ROM drive of the computer.

3 Click "Start" and then click "Run".



4 Type "D:\Setup.exe".

Type the drive letter for the CD-ROM drive of the computer in place of "**D**".



5 Click the [OK] button.

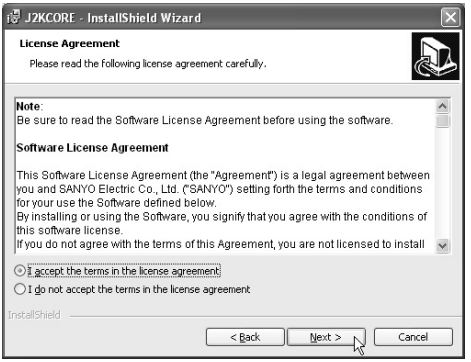
After a short wait, the installation window will appear.

Note: Simply answer the prompts that appear on the screen in order to continue installing the software. The installation program has been set up beforehand to install the software correctly.

6 Click the [Next] button.



7 Read the license agreement, and select "I accept the terms in the license agreement" if you agree to the terms of the license. Then click the [Next] button.

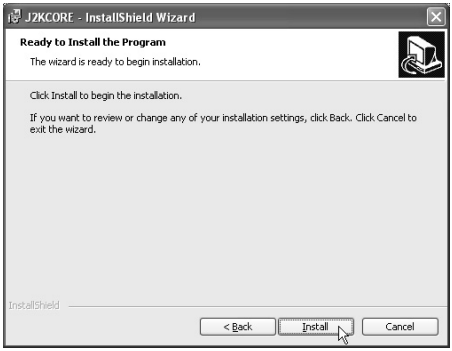


8 **Type in your username and organization name, and then click the [Next] button.**



9 **Click the [Install] button.**

Installation of the software will start and the window display will change to show the installation progress.





10 **Click the [Finish] button.**

This completes the installation of the plug-in software.



(Uninstalling the plug-in software)

To uninstall the plug-in software, select "**Add/Remove Programs**" from the Windows Control Panel, and delete "**J2KCORE**".

Browser Settings

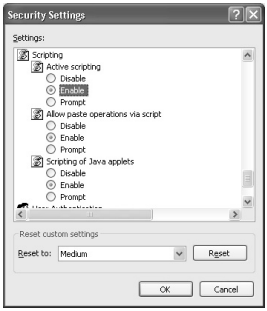
Check that the Security settings for Microsoft Internet Explorer are set as described below. Select Internet Options from the Tools menu, click the Security tab and then click the Custom Level button to display the settings.



1 Click "Enable" for "Run ActiveX controls and plug-ins" in the "ActiveX controls and plug-ins" section.



2 Click "Enable" for "Active scripting" in the "Scripting" section and then click the [OK] button.

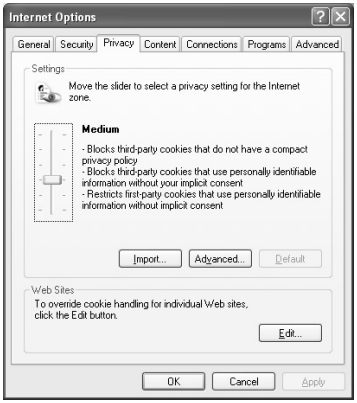


Cookie Settings

The camera uses cookies.

If using Internet Explorer Version 6.0 as the web browser, select Internet Options from the Tools menu, click the Privacy tab, move the slide bar to the "**Medium**" or lower position and then click the **[OK]** button.

Note: If using Internet Explorer Version 5.5 SP2, click the Security tab.



2 Wired LAN Settings

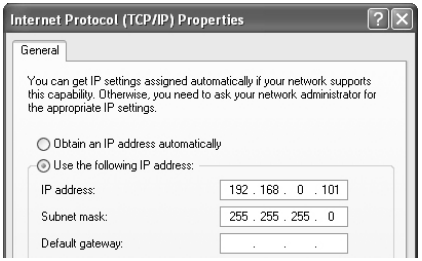
Once the plug-in software has been installed, use the computer's web browser to access the camera.

Note: The network camera handles large volumes of image data that has been compressed into JPEG2000 format. In order to provide smooth access to the camera, you should close any other applications that you do not need to have open.

1 Use an Ethernet cable to connect the camera and the computer.

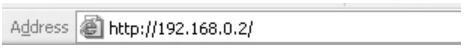
Refer to "**Basic connections**" in the "**Connections**" section.

2 Click on the Network Connections icon in the computer's Control panel, and then make the Internet protocol settings (IP address and subnet mask) for the computer.



- **IP address setting:**
 The camera's IP address is set to "**192.168.0.2**", so type in a spare number that is 3 or higher for the IP address.
 Example: "**192.168.0.101**"
- **Subnet mask setting:**
 Type in "255.255.255.0".

3 Start the web browser on the computer, type "http://192.168.0.2/" into the location bar and then press the [Enter] key.



The password entry window will be displayed.

4 Type in the username (ID3) and the password (3333), and then click the [OK] button.

The language selection window will be displayed.



Note: The username and password settings in this screen are initially set to the Administrator level settings (ID: "**ID3**"; password: "**3333**") so that all required settings can be made. There are separate passwords for each of the three access levels (Administrator, Operator and User), and the passwords can be changed. Refer to "**Access Level Settings**" for further details.

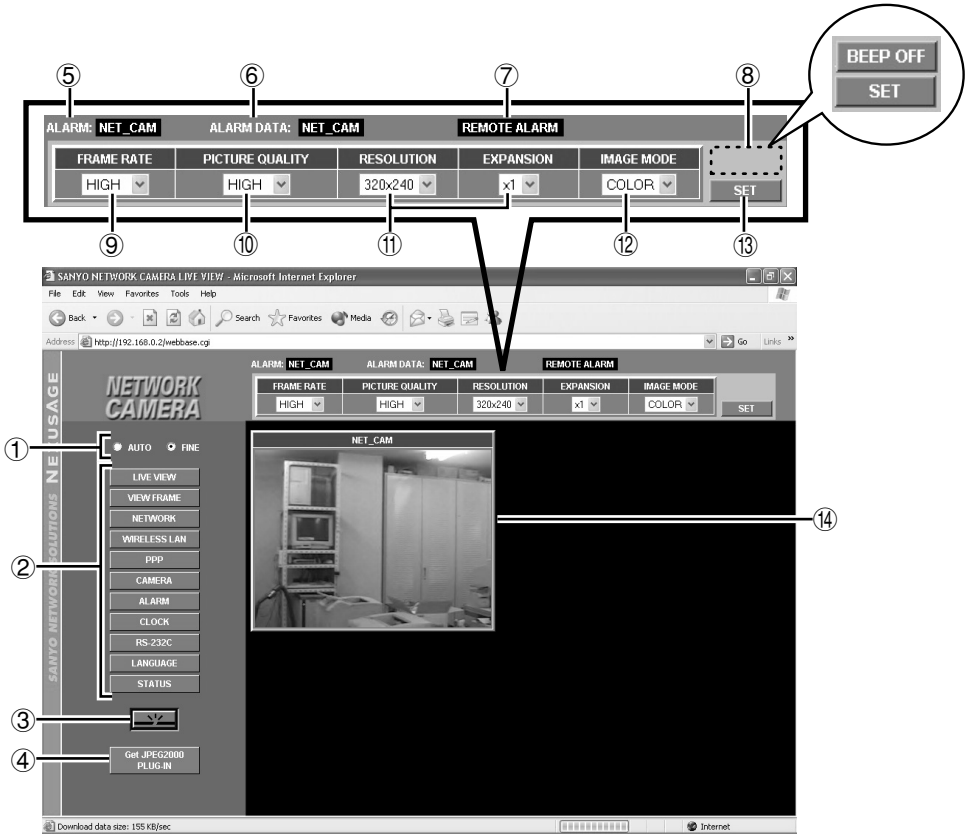
Language selection window



The initial screen will be displayed.

Initial Camera Screen

The initial screen is displayed once the network camera and the computer have been set. The initial screen contains the buttons that are required for making various settings, and it also shows live images from the network camera that have been compressed into JPEG2000 format.



① Image quality mode select buttons

Selects the quality for the live images that are being transmitted.

Available settings:

- **AUTO: (default setting)**
 The live images being transmitted are automatically adjusted in accordance with the computer.
- **FINE:**
 The live images being transmitted are displayed at high quality. The actual image display quality will vary depending on the original quality at the time of transmission.

Note: The quality of the images will vary depending on the capabilities of the computer. If this is a problem, change the setting to "**FINE**". However, when fine mode is selected, the image display speed will be slower.

② **Menu select buttons**

The live image display area and setting area changes when you click on one of these buttons.

- **[LIVE VIEW] button**
 Live images can be monitored.
- **[VIEW FRAME] button**
 Sets the live image display area to a fixed image size (720x480).
- **[NETWORK] button**
 Used when making network settings.
- **[WIRELESS LAN] button**
 Used when making wireless LAN settings.
- **[PPP] button**
 Used when setting up an Internet connection using a modem.
 Archive software (sold separately) is required when using these settings.
- **[CAMERA] button**
 Used when making settings for the camera such as camera title, image quality and day/night mode.
- **[ALARM] button**
 Used when making settings for alarm recording and motion sensors.
- **[CLOCK] button**
 Used when setting the camera's clock.
- **[RS-232C] button**
 Used when setting the communication speed when the camera is connected directly to the computer.
- **[LANGUAGE] button**
 Click this button if you would like to change the language. The language selection screen will be displayed.
- **[STATUS] button**
 Used when checking firmware versions and information relating to the camera.

③ **Network disconnect button**



Click this button to shut down operation of the network camera. The following message will be displayed when this button is clicked. To reconnect the camera, click the (Refresh) button in the title bar.



④ **[Get JPEG2000 PLUG-IN] button**

If you need to install the JPEG2000 plug-in software, click this button to point the browser to a website page for downloading the software.
Select "**JPEG2000 Plug-in Software**" and then start the download. You will need an Internet connection in order to download the software.

⑤ **ALARM indicator**



- **Off:** No alarm data, or recording of images is complete
- **Lit red:** Post-alarm recording in progress
- **Lit orange:** Pre-alarm recording in progress

⑥ **ALARM DATA indicator**



- **Lit red: (alarm recording image playback is possible)**
 Internal memory or expanded memory (installed in the PC card slot) is filled by alarm recording images.
- **Lit orange: (alarm recording image playback is not possible)**
 Alarm recording images are currently being transferred from internal memory to expanded memory, alarm recording is in progress, or and expanded memory error has occurred.
- **Lit green: (alarm recording image playback is possible)**
 Alarm data can still be recorded into the expanded memory.

Note: Refer to "**Alarm Settings**" for further details on alarm recording. (p. 32)

⑦ **REMOTE ALARM indicator (p. 38)**



If "**ALARM OUT MODE**" is set to "**REMOTE CONTROL**" (remote alarm operation indicator display: black), the output status from the alarm output connector can be set to continuous output or timed output.

- **Black indicator:**
 No output status when "**ALARM OUT TIME**" has been set.
- **Red indicator:**
 Output status when "**ALARM OUT TIME**" has been selected. When the set time is exceeded, the indicator changes to black, but if you click the indicator once more, the specified indicator illuminates.
- **Grey indicator:**
 No output status when "**ALARM OUT TIME**" is set to "**REMOTE**".
- **Orange indicator:**
 Output status when "**ALARM OUT TIME**" is set to "**REMOTE**". The output status can be turned on and off repeatedly by clicking the indicator.

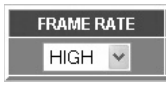
⑧ **BEEP OFF indicator (p. 34)**



If "**ALARM SOUND MODE**" is set to "**USE**", this display appears at the same time as the buzzer sounds when an alarm is detected. Click the indicator to stop the alarm buzzer from sounding.

The alarm buzzer will stop automatically when alarm recording is complete.

⑨ **FRAME RATE setting**
(default setting: HIGH)



Set the image transmission speed from the drop-down list box. Images can be transmitted at maximum speed depending on the network environment that the camera is connected to.

For example, if the maximum transmission speed for the network being connected to is 15 fps, then the images can only be transmitted at a maximum speed of 15 fps, even if the frame rate is set to "**MID 3**" or higher.

Available settings:

BASIC (5 fps), MID 1 (10), MID 2 (15), MID 3 (20), HIGH (30)

⑩ **PICTURE QUALITY setting**
(default setting: MID 2)



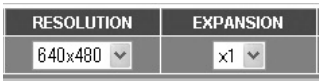
Use the drop-down list box to select the image quality (image compression ratio). If a higher compression ratio is used (BASIC), the volume of image data becomes smaller (the amount of image deterioration becomes greater) and the transmission speed becomes faster.

Available settings:

BASIC, MID 1, MID 2, MID 3, HIGH

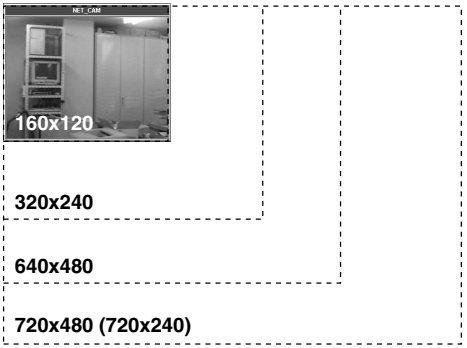
Note: Alarm recording is carried out at the picture quality that is specified in the alarm recording settings, not at the setting that is made here. (p. 41)

⑪ **RESOLUTION and EXPANSION settings (default settings: 640x480, x1)**



- Select the image resolution from the drop-down list box. The volume of data transmitted will be larger when a higher resolution is selected.
- Use the drop-down list box to set the enlargement ratio to x2 or x4 (when the image size is 160x120) or x2 (when the image size is 320x240). The image will appear coarser when a greater enlargement ratio is selected.

(Selection screen example)



Note:

- When images that are compressed using JPEG2000 are played back, the image refresh rate will vary depending on the performance specifications of the computer being used. In addition, if other applications besides the web browser are running, this may also cause the image refresh rate to become slower or may result in unstable operation. You should avoid running other applications at the same time as much as possible.
- Set the FRAME RATE, PICTURE QUALITY (COMPRESSION RATIO) and RESOLUTION settings to levels that will not interfere with the operation of the network. If the amount of data being transferred is too large for the network environment, it may have an adverse effect on other network operations.
- The picture quality and image resolution cannot be changed when pre-alarm recording has been set.

⑫ **IMAGE MODE setting (default setting: COLOR)**



Select whether live images are to be displayed in color or black and white from the drop-down list box.

If you select "**GRAY**" for black and white images, the amount of data transmitted will be reduced, so that the transmission speed can be increased.

Note: This setting is the image mode (color or black & white) for the browser display. It is not the same as the DAY/NIGHT setting.

⑬ **[SET] button**



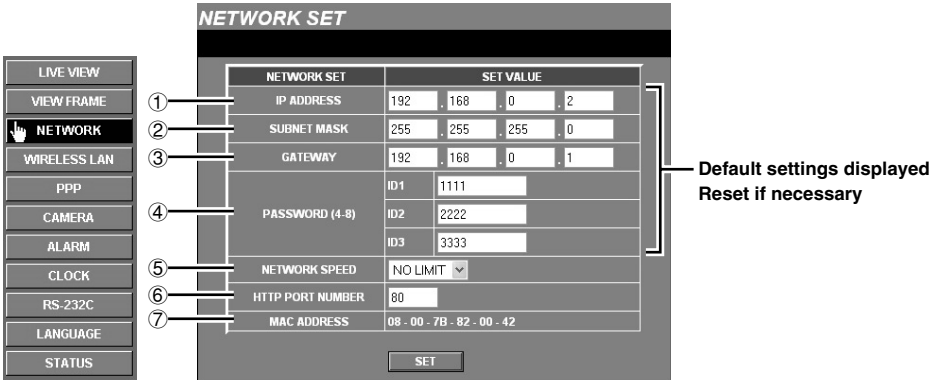
Click this button to accept the settings that have been made using the drop-down list boxes.

⑭ **Image display area**

- Live images are displayed when the [LIVE VIEW] or [VIEW FRAME] menu select button is clicked.
- When the other menu select buttons are clicked, the respective setting screens are displayed.

3 NETWORK SET Settings

These settings are used in order to connect the camera to the network. After these settings have been completed, you may also have to make wireless LAN settings or PPP settings. More than one camera can be connected to the same network, but in order to do this, you will need to make settings for each camera such as assigning separate IP addresses before connecting the cameras to the network.



☞ Click the [NETWORK] menu select button.

The NETWORK SET screen will be displayed, and the default settings for each item will be displayed automatically.

Once you have completed making the settings, click the **[SET]** button.

Note: Check with the network system administrator or Internet Service Provider if you need to change the IP address ①, subnet mask ② or gateway ③ settings.

④ Set the password.

There are three access levels available (User, Operator and Administrator) and separate passwords can be set for each level. The factory default settings are shown in **Table 1** (p. 23), and the range of operations varies as indicated for each access level.

Note: It is recommended that you change the passwords whenever possible for security purposes. (p. 21)

⑤ NETWORK SPEED

This sets the speed of data transmission by the camera.

Available settings:

64, 128, 256, 512, 1024 (Kbps), **NO LIMIT**
(Default setting: No limit for transmission speed)

⑥ HTTP PORT NUMBER

(default setting: 80)

This setting is used when more than one camera is connected to a broadband router and a single IP address for that router is being used to make the images being monitored by the camera publicly available over the Internet. Refer to the documentation provided with the broadband router for further details.

Normally the HTTP PORT NUMBER setting should be left "**80**" without being changed, even if more than one camera is connected to the network.

⑦ **MAC ADDRESS display**

This shows the Mac address for the camera.

Note:

- Up to a maximum of 16 individual users can access a single camera on the network at the same time. However, only one user out of this maximum of 16 users can be accessing at Operator or Administrator level at any one time.
- Depending on the network environment, it may not be possible for 16 users to be connected to a camera at the same time. Once a user has accessed a camera, the network may not allow further accesses, so if this happens, change the resolution for the transferred data (by reducing it) or change the compression ratio (by increasing it) to reduce the volume of data being transferred.
- If a 17th user tries to access a camera, the message "**THE UNIT IS BUSY!**" will be displayed on their screen. Depending on the network environment, the message "**THE UNIT IS BUSY!**" may be displayed on a user's computer screen even when less than 16 users are accessing a camera.
- If a user at Administrator level accesses a camera while a user at Operator level is accessing the camera, the Administrator level user will have priority. In such cases, the Operator level user will be disconnected and the message "**THE UNIT IS DISCONNECTED!**" will be displayed on their screen.
- If an Operator or Administrator attempts to access the camera while another user with the same access level is accessing the camera, the second access will have priority. In such cases, the first access will be disconnected, and the message "**THE AUTHORIZED USER LOGGED IN!**" will be displayed on that user's computer screen.
- Depending on the network environment, the speed of data transmission to users may drop if the number of users accessing the same camera increases, and operations such as refreshing of images may become delayed.

■ Changing a password

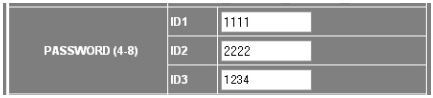
Example: To change the password for the Administrator level (ID3) to "1234"

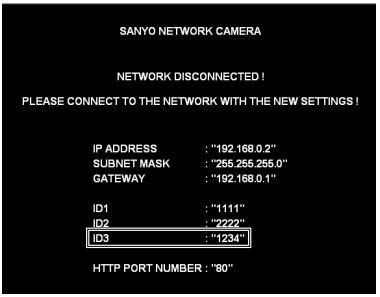
Passwords can consist of between 4 and 8 numerals.

☞ **Delete the current password ("3333") in the password column for ID3, type "1234" as the new password for ID3, and then click the [SET] button.**

The following window will be displayed.

Check that the details are correct, and then close the window.





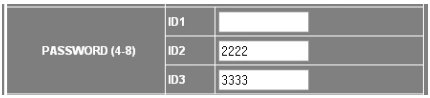
(When a password has been changed)

When the camera and the computer are connected once more, the network password entry screen will be displayed, so check the username and type in the new password ("**1234**") in the password column for ID3.

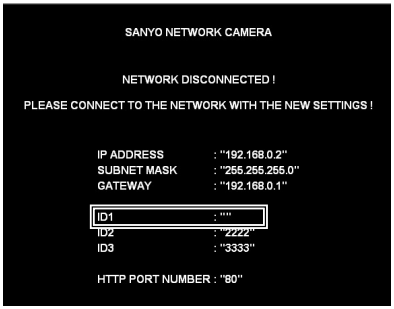
Viewing Live Images Without Typing In a Username or Password (ID1 only)

Normally you need to type in a password at the password entry screen in order to display the live image screen. However, if you make the settings described below, you can view the live image screen without having to type in a password. In this case, you will be logged in at user level "**ID1**".

1 Delete the password in the password column for ID1, and then click the [SET] button.



The following window will be displayed. Check that the ID1 password is blank, and then close the window.



2 Turn the camera off and then back on again.

A single-image live image screen will be displayed.

Note:

- If the ID1 password is blank, a single-image live image screen will always be displayed.
- To return to normal password entry, type in a password for ID1 (example: 1111).

Changing the Access Level (ID2 or ID3)

If live images are monitored without using a password, the **[SET]** button will change to "**CHANGE ID**". To change the access level to "**ID2**" or "**ID3**", follow the procedure below.



1 Click the [CHANGE ID] button at the top-right of the live image screen.

The password entry screen will be displayed.

Note: The password entry screen can also be displayed by clicking any one of the menu select buttons.

2 Type in the user name and password for the required user level, and then click the [OK] button.

(Example: ID3, 3333)

The access level will then change to those for user level ID3 (Administrator).



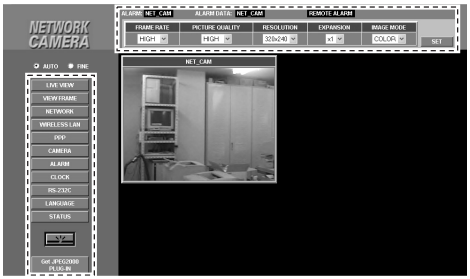
Access Level Settings

When operating the network camera, you need to select an access level to either limit operations to only the monitoring of live images or to allow menu settings to be changed as well.

The access level setting depends on the "**Username**" and "**Password**" that are typed in after the wired LAN settings have been made. (p. 15)

The default access level is "Administrator" (ID3, 3333) which allows all operations to be carried out. Change the username and password to the desired access level while referring to the table below.

Table 1

Username/password	Access level
For Administrator access level Username: ID3 Password: 3333 	All operations and settings can be carried out. 
For Operator access level Username: ID2 Password: 2222 	Only the following buttons can be operated. 
For User access level Username: ID1 Password: 1111 	Only the following buttons can be operated. The transmission setting menu in the live image screen is disabled. 

In order to make it easier to refer to this Instruction Manual when carrying out the various camera operations, the usernames (**ID1**, **ID2** and/or **ID3**) are indicated in the top-right corner of the page. For example, if **ID3** appears, then the operation is only available at the Administrator level.

CLOCK SET Settings

ID3

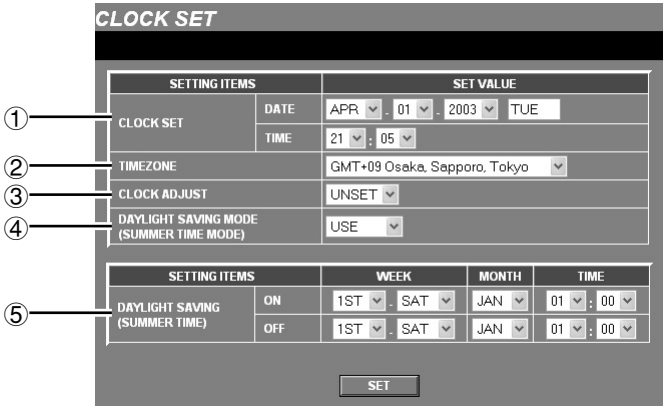
This lets you set the camera's internal clock. You can also make settings for summer time.

Click the [CLOCK] menu select button.

The CLOCK SET screen will be displayed. Set the date and time using the drop-down list boxes, and then click the **[SET]** button.



Note: To return to the live image screen, click the **[LIVE VIEW]** button.



① DATE and TIME settings

The default time setting is 00:00 on Jan 01 2003. Set the DATE and TIME. The weekday will be set automatically.

② TIMEZONE

This lets you set your standard time zone. Select the time zone for the camera's location.

③ CLOCK ADJUST setting

This synchronizes the camera's time with the computer's time.

Select the time setting from the drop-down list box, and then click the **[SET]** button.

- **UNSET:** If the time has not been set when you log in (default setting), it will be set automatically.
- **LOGIN:** The time is set automatically each time you log in.
- **OFF:** The time is not set.

Note: Make sure that the computer's time is set correctly.

④ DAYLIGHT SAVING MODE

The daylight saving settings are displayed when "**USE**" is selected from the drop-down list box.

Available settings:

- **USE:** Daylight saving time is used.
 When set to "**USE**", you can then set the times for daylight saving to be applied.
- **NO USE:** Daylight saving is not used.

⑤ DAYLIGHT SAVING

When the set date and time is reached, the camera's time automatically changes from standard time to summer time. You need to set the start time (ON) and end time (OFF) for summer time.

WEEK ... Sets the week and weekday.

Available settings:

- **Week:** 1ST, 2ND, 3RD, 4TH, LST
- **Day:** SUN, MON, TUE, WED, THU, FRI, SAT

MONTH ... Sets the start month and end month for summer time.

TIME ... Sets the hours and minutes.

CAMERA Settings

ID2 ID3

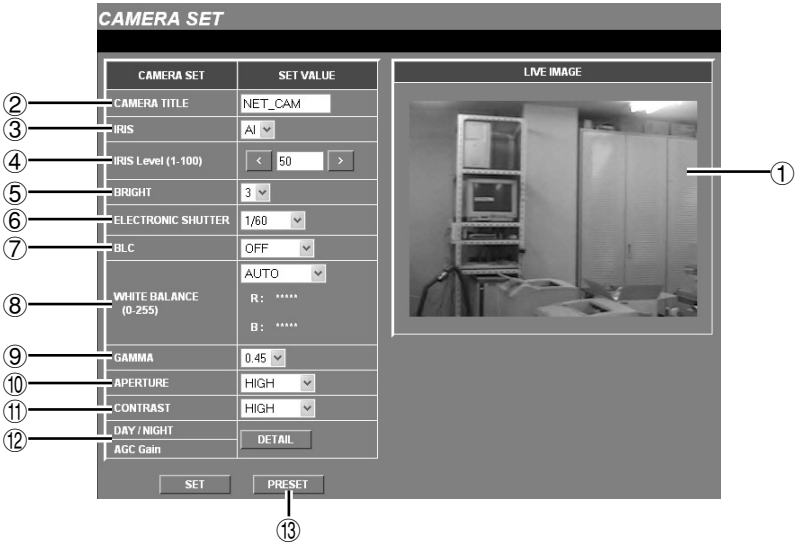
Click the [CAMERA] menu select button.

This lets you set the camera title and adjust the images and make day/night settings in accordance with the camera setting-up conditions.



The CAMERA SET screen will be displayed.

Note: If you click the **[LIVE VIEW]** button, the live image screen will be displayed.



① LIVE IMAGE

This displays the live images from the camera. You can change the various camera settings while viewing live images.

If you change one of the adjustment settings and then click the **[SET]** button, the images in the live image screen will be changed to reflect the new setting. If you click the live image screen, the initial camera screen will be displayed.

② CAMERA TITLE

This sets the camera title that is displayed in the live image screen. The default camera title is "**NET_CAM**".

③ IRIS

Select automatic iris or electronic iris.

Available settings:

- **AI:** Automatic iris (default setting)
- **EI:** Electronic iris

Note: The electronic iris does not have an electronic shutter setting.

④ IRIS Level

Click the < and > buttons repeatedly to adjust the iris level.

Setting range: 1 to 100

Note: The larger the setting, the wider is the iris.

⑤ BRIGHT

This lets you set the image brightness to one of five settings.

Setting range: 1 to 5 (default setting: 3)

Note: The larger the setting, the brighter are the images.

⑥ **ELECTRONIC SHUTTER**

This setting is used when IRIS is set to automatic iris.

Setting range: 1/60 (default setting), 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000

⑦ **BLC (backlight compensation)**

Available settings:

- **OFF (default setting):** Backlight compensation is not carried out.
- **MULTI (multiple point photometry):** Backlight compensation is calculated from the whole image to obtain correct images.
- **CENTER (center focus photometry):** Backlight compensation is calculated based on the center of the image to obtain correct images.

⑧ **WHITE BALANCE**

Available settings:

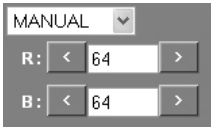
- **AUTO (automatic white balance)(default setting):** The white balance is adjusted automatically to obtain correct colors even if the light source changes.
- **INDOOR:** This setting is for when the camera is being used indoors under fluorescent lighting.
- **OUTDOOR:** This setting is for when the camera is being used outdoors under natural sunlight.
- **MANUAL (manual white balance):** This lets you make manual fine adjustments to the white balance. When "**MANUAL**" is selected, you can adjust the red and blue colors. It can be used when the "**AUTO**" setting does not give correct color reproduction.

☞ Setting manual white balance (MANUAL)

Click the < and > buttons repeatedly to adjust the settings for **R** (red) and **B** (blue).

Setting range: 0 to 255

Note: The red or blue component becomes stronger when the setting is higher.



⑨ **GAMMA**

Select a value that is suitable for the monitor being used.

Setting range: 1, 0.8, 0.6, 0.45 (default setting), 0.3

⑩ **APERTURE**

Set to "HIGH" if you would like the contours of the objects in the images to be emphasized. (Available settings: NORMAL, HIGH)

⑪ **CONTRAST**

Available settings:

- **NORMAL:** When mainly viewing dark places
- **HIGH:** When mainly viewing bright places

⑫ **DAY/NIGHT, AGC gain**

Click the **[DETAIL]** button to change the DAY/NIGHT and AGC Gain settings. The "**DAY/NIGHT SET**" screen will be displayed and detailed settings can be made in this screen. (p. 27)

⑬ **[PRESET] button**

Click this button to return all settings to their factory defaults. A dialog box will be displayed. Click the **[OK]** button to return the values to their factory defaults.



Setting the camera title

1 **Move the cursor to the current camera title (e.g. NET_CAM), and delete the title.**

CAMERA SET	SET VALUE
CAMERA TITLE	NET_CAM

2 **Type in the new camera title (e.g. SANYO01).**

CAMERA SET	SET VALUE
CAMERA TITLE	SANYO01

Note: The camera title can be up to eight characters in length, and may include alphanumeric characters and the underscore character only.

3 **Click the [SET] button.**

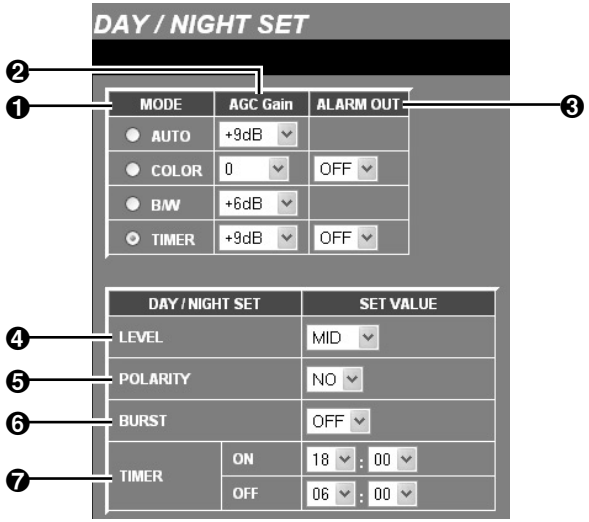
The new camera title will be saved and it will appear in the camera title display of the live image screen.



DAY/NIGHT Settings

The images being monitored can be switched between color and black & white depending on the luminance of the objects being monitored.

The DAY/NIGHT settings can be selected from one of four modes (AUTO, COLOR, B/W and TIMER). Click the **[DETAIL]** button in the DAY/NIGHT field to display the DAY/NIGHT SET screen.



❶ MODE

This sets the DAY/NIGHT mode.

Item	Operation after selection	Required settings
AUTO (p. 29)	Monitoring switches automatically between color and black & white depending on the luminance of the objects.	❷ AGC Gain ❹ LEVEL ❻ BURST
COLOR (p. 29)	Images are monitored in color regardless of the luminance of the objects. In addition, devices such as an infrared sensor can be used to externally switch between color and black & white.	❷ AGC Gain ❸ ALARM OUT ❺ POLARITY ❻ BURST
B/W (p. 30)	Images are monitored in black & white regardless of the luminance of the objects.	❷ AGC Gain
TIMER (p. 30)	Monitoring can be switched between color and black & white after the length of time specified.	❷ AGC Gain ❸ ALARM OUT ❻ BURST ❼ TIMER

❷ AGC Gain

If the objects are dark, set the AGC Gain to the maximum value so that images are made brighter when they are being monitored. The AGC Gain can be set separately for each mode.

Available settings:

- **AUTO:** +9dB (default setting), +12dB, +15dB
- **COLOR:** –6dB, 0 (default setting), +6dB, +9dB, OFF (AGC is not used)
- **B/W:** –6dB, 0, +6dB (default setting), +9dB, +12dB, +15dB, OFF (AGC is not used)
- **TIMER:** +9dB (default setting), +12dB, +15dB, OFF (AGC is not used)

Note: When the AGC gain is increased, sensitivity will also be increased for dark objects and they will appear bright, but interference will also increase.

❸ ALARM OUT (Set when using COLOR and TIMER mode)

When an IR lamp or similar device is connected to the ALARM OUT terminal at the rear of the camera, the IR lamp can be made to illuminate when the mode switches from color to black & white.

Available settings: OFF, NC, NO

❹ LEVEL (Set when using AUTO mode)

This sets the luminance for switching automatically between color and black & white.

Available settings: LOW, MID (default setting), HIGH (switching at brighter luminances)

❺ POLARITY (Set when using COLOR mode)

This sets the input polarity for the D/N IN terminal at the rear of the camera. When a device such as an infrared sensor is connected to the D/N IN terminal, it can be used for forcibly switch from color to black & white.

Available settings: NC, NO

❻ BURST

This sets the color burst for MONITOR OUT connector image signals. Sometimes distortion can occur when the mode switches from color to black & white depending on the connection. If this happens, change this setting to "**ON**".

Available settings: OFF, ON

❼ TIMER (Set when using TIMER mode)

Set the time for switching from color to black & white from the drop-down list boxes. Monitoring will be in color at other times.

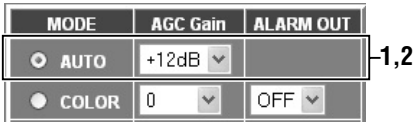
Available settings:

- **ON:** When the set time is reached, monitoring changes to black & white (Default setting: 18:00)
- **OFF:** When the set time is reached, monitoring changes to color (Default setting: 6:00)

Note: Settings that overlap a day can also be made.

☞ AUTO Mode Settings

1 Click the [DETAIL] button in the DAY/NIGHT field and set MODE to "AUTO".

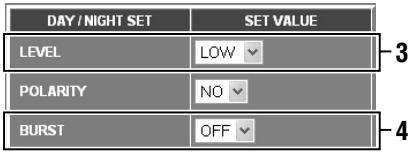


2 Set "AGC Gain" to "+12 dB" (example).

3 Set "LEVEL" to "LOW" (example).

The switching level for changing between color and black & white can be set to one of three levels: LOW, MID and HIGH.

4 Set "BURST" to "OFF" (example).

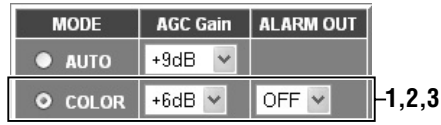


5 Click the [SET] button.

This completes the AUTO mode settings. Monitoring will switch between color and black & white according to the set conditions.

☞ COLOR Mode Settings

1 Click the [DETAIL] button in the DAY/NIGHT field and set MODE to "COLOR".



2 Set "AGC Gain" to "+6 dB" (example).

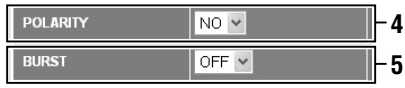
3 Set "ALARM OUT" to "NO" (example).

A signal can be output from the ALARM OUT terminal when monitoring switches to black & white. (An IR lamp can be connected so that it illuminates at such times.)

4 Set "POLARITY" to "NO" (example).

The D/N IN terminal at the rear of the camera can be used to forcibly switch monitoring from color to black & white.

- **NO (Normal open):** Normally open, so that when closed, monitoring switches between color and black & white.
- **NC (Normal close):** Normally closed, so that when opened, monitoring switches between color and black & white.



Note: Color/black & white switching settings are applied when the DAY/NIGHT SET screen is closed.

5 Set "BURST" to "OFF" (example).

6 Click the [SET] button.

This completes the COLOR mode settings. Monitoring will switch from color to black & white according to the set conditions.

☞ B/W Mode Settings

1 Click the [DETAIL] button in the DAY/NIGHT field and set MODE to “B/W”.



2 Set “AGC Gain” to “+12 dB” (example).

3 Click the [SET] button.

This completes the B/W mode settings. Monitoring will switch to black & white according to the set conditions.

☞ TIMER Mode Settings

Example: To set monitoring to black & white between 20:00 p.m. and 4.00 a.m.

1 Click the [DETAIL] button in the DAY/NIGHT field and set MODE to “TIMER”.

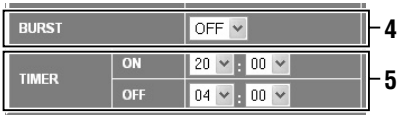


2 Set “AGC Gain” to “+12 dB” (example).

3 Set “ALARM OUT” to “NO” (example).

A signal can be output from the ALARM OUT terminal when monitoring switches to black & white. (An IR lamp can be connected so that it illuminates at such times.)

4 Set “BURST” to “OFF” (example).



5 Change the TIMER ON setting to “20:00” and the OFF setting to “04:00”.

6 Click the [SET] button.

This completes the TIMER mode settings. Monitoring will switch from color to black & white during the set time period. At other times, monitoring will be in color.

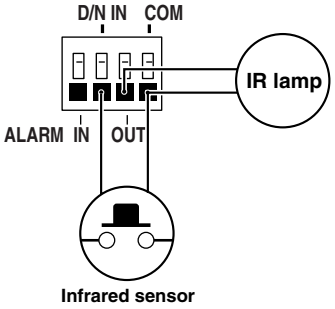
☞ Using an IR lamp to illuminate during black & white monitoring in COLOR mode

When using COLOR mode, connect a device such as an IR lamp to the ALARM OUT terminal and connect an infrared sensor (for forcibly switching to black & white monitoring) to the D/N IN terminal. (**Figure 1**)

The IR lamp can then be made to illuminate when monitoring switches to black & white.

Note: Change the ALARM OUT setting for COLOR mode to "**NO**" or "**NC**". However, in such cases, the ALARM OUT output and alarm output settings will be disabled during alarm recording. (p. 32)

(Connection example: Figure 1)



1 Change the DAY/NIGHT setting to COLOR mode.

Automatic switching to black & white monitoring will then be possible using the infrared sensor that is connected to the D/N IN terminal.

2 At the same time as the camera images switch to black & white, an ALARM OUT (NO/NC) signal will be output and the connected IR lamp will illuminate.

Note: The IR lamp will illuminate only while black & white monitoring is being carried out. Set the polarity so that a signal is output during black & white monitoring.

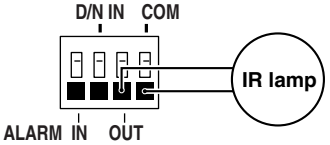
☞ Using an IR lamp to illuminate during black & white monitoring in TIMER mode

When using TIMER mode, connect a device such as an IR lamp to the ALARM OUT terminal. (**Figure 2**)

The IR lamp can then be made to illuminate during the black & white monitoring period.

Note: Change the ALARM OUT setting for TIMER mode to "**NO**" or "**NC**". However, in such cases, the ALARM OUT output and alarm output settings will be disabled during alarm recording. (p. 32)

(Connection example: Figure 2)



1 Change the DAY/NIGHT setting to TIMER mode.

Set the switching time and switch to black & white monitoring.

2 At the same time as the camera images switch to black & white, an ALARM OUT (NO/NC) signal will be output and the connected IR lamp will illuminate.

Note: The IR lamp will illuminate only while black & white monitoring is being carried out. Set the polarity so that a signal is output during black & white monitoring.

Alarm Settings

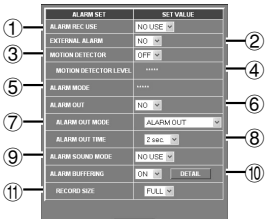
Click the [ALARM] menu select button.



The camera is equipped with two types of alarm function. When an outside intruder is detected, these alarm functions can be used to record the images immediately before the alarm occurred (pre-alarm recording) and the alarm images themselves (post-alarm recording) into the camera's internal memory or onto a memory card, and these recorded images can then be played back.

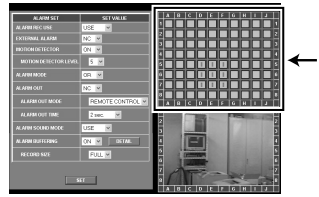
External alarm sensor settings

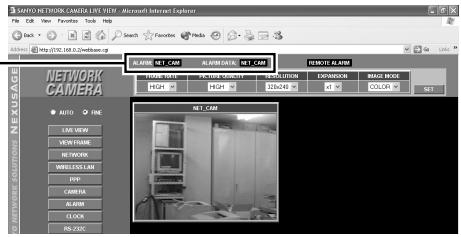
- When a device such as an infrared sensor is connected to the ALARM IN terminal at the rear of the camera and this sensor detects an intruder, the camera images are recorded in the camera's internal memory.
- Once "**EXTERNAL ALARM**" has been set to either "**NO**" or "**NC**", further detailed settings can then be made.



Motion detector settings

- While viewing the live images, you can set sensor marks [■] in the motion sensor detection area, and also set the detection sensitivity. When the sensor detects an intruder, the camera images are recorded in the camera's internal memory.
- Detailed settings can be made if the "**MOTION DETECTOR**" alarm setting is set to "**ON**".



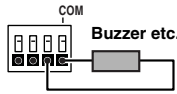


Alarm detection and recording

- If an alarm is detected by either an external alarm sensor or a motion detector, the ALARM indicator and the ALARM DATA indicator illuminate simultaneously.
- When images are being recorded in the camera's internal memory, the ALARM indicator switches off and the ALARM DATA indicator illuminates red. Playback of alarm recording images is possible at this time.

Alarm checking (Output)

- When an alarm has been detected by either an external alarm sensor or a motion detector, the alarm status can be checked visually and/or audibly.
- For example, if an indicator is connected to the ALARM IN terminal the indicator can be made to illuminate when an alarm is being received, or if a buzzer is connected, it can be made to sound at this time.



① ALARM REC USE

This function stops any motion that occurs during alarm setting. After the alarm settings have been made, change this setting to "**USE**" so that alarms can be detected in accordance with the settings.

② EXTERNAL ALARM

Select "**NC**" (normal close) or "**NO**" (normal open) to display the external alarm setting menu.

Available settings:

- **OFF:** No external alarm input is detected.
- **NC:** Normal close (normally closed, but input is detected when open).
- **NO:** Normal open (normally open, but input is detected when closed).

③ MOTION DETECTOR

When set to "**ON**", the MOTION DETECTOR SET screen is displayed. Sensor marks (▮) are used to set the detection area in this setting screen.

④ MOTION DETECTOR LEVEL

This sets the sensitivity level for the sensor marks (▮). See p. 38 for details on the sensitivity level.

⑤ ALARM MODE

This selects what combination of external alarm and motion detector is to be used to provide alarm input. Make this setting when "**EXTERNAL ALARM**" is set to either "**NC**" or "**NO**" or "**MOTION DETECTOR**" is set to "**ON**".

The ALARM OUT terminal settings also need to be made.

Available settings:

- **AND:** An alarm is generated when both the external alarm and the motion sensor receive alarm input.
- **OR:** An alarm is generated when either the external alarm or the motion sensor receives alarm input.

⑥ ALARM OUT

This is used to make settings for a device such as a buzzer that is connected to the ALARM OUT terminal at the rear of the camera when an alarm is input.

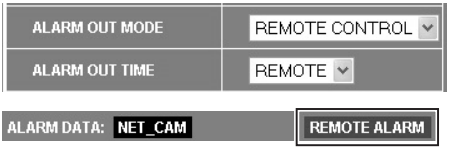
When "**NC**" (normal close) or "**NO**" (normal open) is selected, the ALARM OUT MODE or ALARM OUT TIME menu is displayed.

Available settings:

- **OFF:** No alarm is output when an alarm is received.
- **NC:** Normal close (normally closed, but an alarm is output when open).
- **NO:** Normal open (normally open, but an alarm is output when closed).

⑦ ALARM OUT MODE

This operation can be used to manually switch to output to the ALARM OUT terminal regardless of whether an alarm is being received or not. When set to "**ON**", the REMOTE ALARM indicator is displayed in the initial screen. (p. 38)



⑧ ALARM OUT TIME

This sets the alarm duration when the external alarm or motion detector detects an alarm, or when the **REMOTE ALARM** button is pressed when using the remote function.

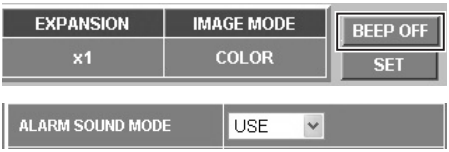
The "**REMOTE**" setting only appears when "**ALARM OUT MODE**" is set to "**REMOTE CONTROL**".

Available settings:

2, 5, 10, 15, 20, 30, 60 sec.,
2, 3, 4, 5 min., REMOTE

⑨ ALARM SOUND MODE

This setting causes an alarm warning to sound when an alarm is detected. If set to "**USE**", "**BEEP OFF**" appears in the initial screen when an alarm is detected at the same time as the alarm buzzer sounds. If you click this indicator, the alarm buzzer will stop.



⑩ ALARM BUFFERING

Set to "**ON**" to record alarm recording images into the camera's internal memory, and then click the **[DETAIL]** button. The ALARM BUFFERING SET screen will be displayed so that you can make detailed settings.

⑪ RECORD SIZE

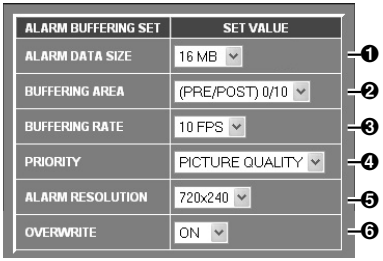
If "FULL" is selected, data is recorded continuously until the selected record size (such as 16 or 12MB) is reached. Furthermore the "**CC**" setting allows data to be recorded in the internal memory up to the specified size but only while the external alarm is being detected (while an external alarm signal is being input).

Available settings:

FULL, CC (can only be set when MOTION DETECTOR is set to "**OFF**")

■ ALARM BUFFERING SET Setting

If you click the **[DETAIL]** button next to "**ALARM BUFFERING**", the ALARM BUFFERING SET screen will be displayed. This screen is used to set the way in which the alarm data that is generated when an alarm is detected is recorded into the camera's internal memory. The recording capacity of the internal memory is set to a default of approximately 16 MB per alarm event.



❶ ALARM DATA SIZE

This sets the size for alarm data that is recorded into the internal memory. The pre/post selection ratio for the alarm recording area will vary depending on the size that is set.

Available settings:

- **16, 12, 8, 4 MB:** All available alarm recording area ratios can be selected.
- **2 MB:** The pre/post ratio of 1/9 cannot be selected.
- **1 MB:** The pre/post ratios of 1/9 and 2/8 cannot be selected.
- **0.5 MB, TWO IMAGES:** The pre/post ratio is fixed at 0/10.

Note: "**TWO IMAGES**" can be selected when PPP is being used.

❷ BUFFERING AREA

This sets the ratio between the pre-alarm and post-alarm recording areas in the internal memory.

Available settings:

(PRE/POST) 0/10, 1/9, 2/8, 3/7, 4/6, 5/5

❸ BUFFERING RATE

This sets the recording rate (buffering rate) when data is being recorded into the internal memory.

Available settings:

MAX, 10FPS, 5FPS, 2FPS, 1FPS

❹ PRIORITY

This sets the quality for the images recorded in the internal memory.

- **PICTURE QUALITY:** Alarm images are recorded at high image quality.
- **TIME:** Images are recorded with speed as the priority.

 When this setting is made, the time taken for recording alarm data is reduced.

❺ ALARM RESOLUTION

This sets the image size for data being recorded into the internal memory.

Note: When playing back images that have been recorded at a size of 720x240, the vertical size will be adjusted so that they become 720x480 images.

❻ OVERWRITE

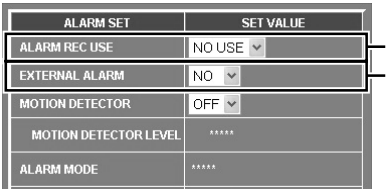
Always be sure to insert the expansion memory card into the card slot before turning on the power for the camera. If you insert the card after the power has been turned on, this item will not be displayed.

If this is set to "**ON**", old alarm images are automatically deleted when the internal memory becomes full, and the new data is written over as it is captured.

External Alarm Sensor Setting

1 Connect a device such as an infrared sensor to the ALARM IN terminal at the rear of the camera.

2 Set "ALARM REC USE" to "NO USE" (example).



3 Set "EXTERNAL ALARM" to "NO" (example).

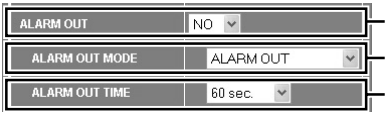
For example, if a door is closed, it will trigger an alarm.

For details, see "② **EXTERNAL ALARM**".

4 Set "ALARM OUT" to "NO" (example).

For example, you can cause a buzzer that is connected to the ALARM OUT terminal to sound.

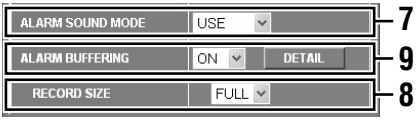
For details, see "⑥ **ALARM OUT**".



5 Set "ALARM OUT MODE" to "ALARM OUT".

6 Use the drop-down list box to change the "ALARM OUT TIME" setting to "60 sec." (example).

7 Set "ALARM SOUND MODE" to "USE".



8 Set "RECORD SIZE" to "CC".

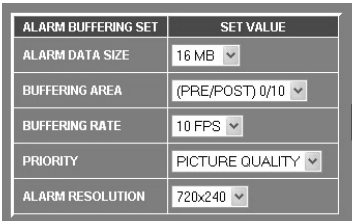
If "**CC**" is selected, recording will only be carried out while an alarm is being input. If "FULL" is selected, recording will continue from the point where an alarm starts to be input until the recording area is full. The recording area is the capacity that has been set in "**BUFFERING AREA**".

9 Set "ALARM BUFFERING" to "ON", and then click the [DETAIL] button.

The ALARM BUFFERING SET screen will be displayed.

10 Change any settings that are required for recording alarm images into the internal memory, and then click the [SET] button.

For example, you can set the following.



The alarm images (16MB) will be recorded at high quality at a resolution of 720x240.

11 Set "ALARM REC USE" to "USE" and then click the [SET] button.

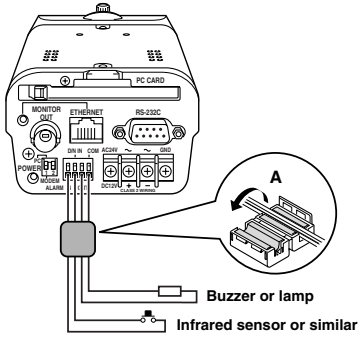
When an alarm is detected, the alarm will sound and the ALARM DATA indicator in the initial screen will be displayed.

(Connection method)

① **Connect an infrared sensor or similar to the ALARM IN terminal at the rear of the camera.**

② **Connect a buzzer or lamp to the ALARM OUT terminal.**

Once the connections are complete, install the supplied ferrite core (A) to the power cord.



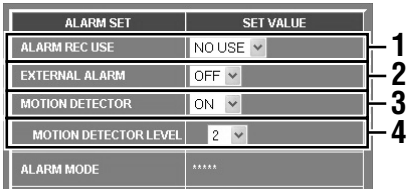
■ MOTION DETECTOR SET Settings

1 **Set "ALARM REC USE" to "NO USE" (example).**

2 **Set "EXTERNAL ALARM" to "OFF" (example).**

3 **Set "MOTION DETECTOR" to "ON".**

The motion detector level and MOTION DETECTOR SET screen will be displayed.



4 **Use the drop-down list box to change the "MOTION DETECTOR LEVEL" setting (example: "2").**

The smaller the value selected, the higher will be the sensitivity. Refer to "**Motion Detector Level Sensitivity Setting**" for further details. (p. 38)

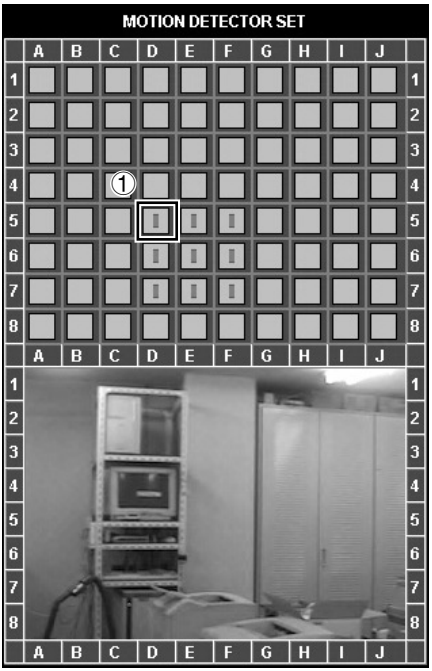
5 **Set the sensor marks.**

These correspond to the live image screen and the sensing area.

① **Move the pointer to the same position (grid area) as the area of the live image screen that you would like sensing to be carried out, and then click the mouse button.**

A sensor mark (▮) will be displayed. Click in the same place once more to clear the mark.

② **In the same way, insert sensor marks in other places as required.**



6 **Click the [SET] button.**

7 **Set "ALARM OUT", "ALARM OUT MODE", "ALARM OUT TIME", "ALARM SOUND MODE" and "ALARM BUFFERING" in the same way as for "External Alarm Sensor Setting".**

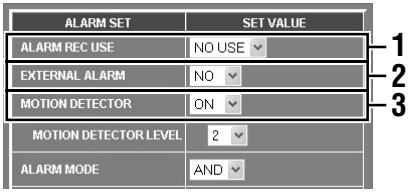
External Alarm Sensor and Motion Detector Settings

1 Set "ALARM REC USE" to "NO USE" (example).

2 Set "EXTERNAL ALARM" to "NO" (example).

3 Set "MOTION DETECTOR" to "ON".

The motion detector level and MOTION DETECTOR SET screen will be displayed.



4 Use the drop-down list box to change the "MOTION DETECTOR LEVEL" setting (example: "2").

The smaller the value selected, the higher will be the sensitivity. Refer to "**Motion Detector Level Sensitivity Setting**" for further details. (p. 38)

5 Set the sensor marks.

Refer to "**MOTION DETECTOR SET Settings**".

6 Set "ALARM MODE" to "OR" (example).

An alarm will then be triggered if either the motion detector or the external alarm sensor detects something. Refer to "⑤ **ALARM MODE**" for details. (p. 33)

7 Click the [SET] button.

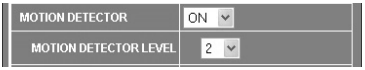
8 Set "ALARM OUT", "ALARM OUT MODE", "ALARM OUT TIME", "ALARM SOUND MODE" and "ALARM BUFFERING" in the same way as for "External Alarm Sensor Setting".

Motion Detector Level Sensitivity Setting

The default setting for the motion detector sensitivity is "**5**". The setting can be selected from a level ranging from "**1**" (High) through to "**10**" (Low).

1 **Set "MOTION DETECTOR LEVEL" to "2" (example).**

Insert sensor marks for the motion detector settings (grid area).



2 **While looking at the MOTION DETECTOR SET screen, click the "ALARM CHECK" indicator.**

The "**ALARM CHECK**" indicator will illuminate green for approximately 5 seconds. Detection of moving objects can be carried out during this time, so you can prepare a moving object in the area around the sensor marks and use it to check the sensitivity setting level.



(Green)

3 **When the sensor marks detect an object, the "ALARM" indicator will illuminate red.**

This indicates that the object has been detected.



(Red)

4 **Repeat the above operation to insert sensor marks in the optimum positions and to set the sensitivity.**

Remote Alarm Operations

You can use the "**REMOTE ALARM**" indicator to set alarm output to come out from the ALARM OUT terminal at the rear of the camera for a specified period or continuously regardless of the actual alarm detection status.

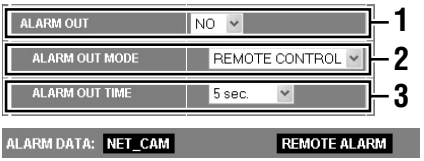
A Alarm Output for a Specified Period

1 **Set "ALARM OUT" to "NO" (example).**

2 **Set "ALARM OUT MODE" to "REMOTE CONTROL".**

3 **Set "ALARM OUT TIME" to "5 sec." (example), and then click the [SET] button.**

This completes the setting, so return to the live image screen. The "**REMOTE ALARM**" indicator (black) will be displayed in the initial screen.



4 **While monitoring the live images, click the "REMOTE ALARM" indicator.**

The "**REMOTE ALARM**" indicator will illuminate red and an alarm will be output for only the 5-second period that was set with "**ALARM OUT TIME**". If you repeatedly click the indicator, a new alarm will be output for another 5-second period each time you click the indicator.



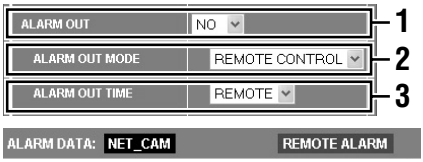
B Continuous Alarm Output

1 Set "ALARM OUT" to "NO" (example).

2 Set "ALARM OUT MODE" to "REMOTE CONTROL".

3 Set "ALARM OUT TIME" to "REMOTE", and then click the [SET] button.

This completes the setting, so return to the live image screen. The "**REMOTE ALARM**" indicator (gray) will be displayed in the initial screen.



4 While monitoring the live images, click the "REMOTE ALARM" indicator.

The "**REMOTE ALARM**" indicator will illuminate orange and an alarm will be output continuously. If you repeatedly click the indicator, the continuous alarm output will turn on and off each time you click the indicator.

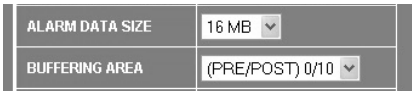


■ Alarm Detection and Recording

A Using Only Post-alarm Recording

1 Set "BUFFERING AREA" to "(PRE/POST) 0/10".

When an alarm is detected, the ratio will be set to Pre = 0 (zero)/Post = 10. In other words, only post-alarm recording will be set.



2 If an alarm is detected in the live image screen, the indicators will illuminate as follows and the images will be recorded into the internal memory.

(1) Alarm not detected (all indicators are off)



(2) An alarm is detected and alarm data is recorded automatically into the internal memory



(Red) **(Orange)**

(3) Recording of alarm data into the internal memory is complete

Once this happens, the recorded data can then be played back.



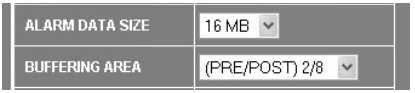
(Red or green)

Note: The alarm data that has been recorded into the internal memory is recorded at the PRIORITY and ALARM RESOLUTION that have been set in the ALARM BUFFERING SET screen. If high quality and a large image size have been set, it will take longer for the images to be refreshed.

B Pre-alarm/Post-alarm Recording

When an alarm is detected, recording is assigned between the pre- and post-alarm recording areas in the ratio specified. You can increase or decrease the length of time that images are recorded before an alarm is detected.

1 Set "BUFFERING AREA" to "(PRE/POST) 2/8".



2 If an alarm is detected in the live image screen, the indicators will illuminate as follows and the images will be recorded into the internal memory.

(1) Alarm not detected (all indicators are off)



(2) Pre-alarm recording starts automatically

Images are recorded in the pre-alarm recording area (PRE 2).



(Orange)

(3) Alarm detected:

Alarm data is automatically recorded into the post-alarm recording area (POST 8).



(Red) **(Orange)**

(4) Recording of alarm data into the internal memory is complete

Once this happens, the recorded data can then be played back.



(Red or green)

Note:

- The display screen in **(4)** shows that the alarm recording area is full and overwriting is set to "**OFF**".
 At times other than this, the ALARM indicator will illuminate orange.
- Settings such as the image size cannot be changed during pre-alarm recording.

Recording New Alarm Data

If recording new alarm data into the camera's internal memory, you should delete the old data that is recorded in the memory. This will free up memory space so that the new alarm data can be recorded. (p. 48)

Note:

- If an expansion memory card (CF) is installed, the alarm data will first be recorded into the camera's internal memory, and then it will be automatically transferred to the memory card. This is useful for times when you want to record more than one alarm event.
- The alarm data in the internal memory can be saved into a computer as still images. Furthermore, the data can also be downloaded as continuous images.

Fixed Settings During Pre/Post-Alarm Recording

If the pre-alarm/post-alarm recording area ratio is set to something from 1/9 to 5/5 so that pre-alarm recording can be carried out, the transmission settings (PICTURE QUALITY, RESOLUTION and IMAGE MODE (COLOR)) are fixed.

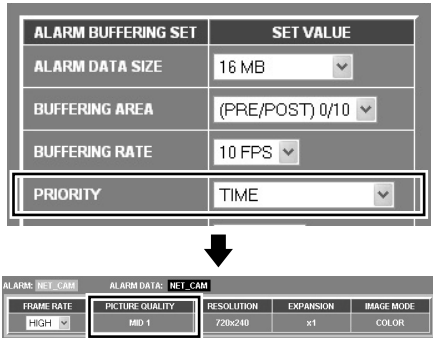
Example 1: If "PRIORITY" is set to "PICTURE QUALITY"

The image quality during pre- and post-alarm recording will be fixed at "**HIGH**".



Example 2: If "PRIORITY" is set to "TIME"

The image quality during pre- and post-alarm recording will be fixed at "**MID1**".



When alarm data is recorded into the camera's internal memory, the settings that are fixed during pre- and post-alarm recording will be canceled. However, if a memory card is inserted, the settings will be fixed until the recording area becomes full.

Saving to an Expansion Memory Card

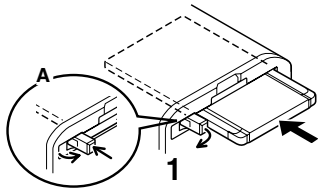
If you would like to save and play back several sets of alarm data from the camera's internal memory, use a CompactFlash memory card with a capacity of 16MB or greater.

CompactFlash memory cards are only used to store alarm data that has been recorded into the internal memory. This means that you cannot directly record data onto the CompactFlash memory cards or directly play back the data they contain.

1 Insert a memory card into the PC card slot at the rear of the camera, while making sure that the direction of the card is correct, and then push the knob down in the direction of the arrow.

This will lock the card in place.

To remove the card, push the knob in the direction of the arrow to release the card.



2 Insert the expansion memory card.

The alarm data in the internal memory will be automatically moved to the memory card.

The data will be deleted from the recording areas of the internal memory at this time.



(Orange) **(Orange)**

3 The ALARM DATA indicator (green) will illuminate.

If alarms are repeatedly detected in this condition, the alarm data will be automatically moved to the memory card.



(Green)

Note:

- If there is no free space on the memory card, the indicator will illuminate red. If this happens, replace the memory card with another card or delete the alarm data.
- When inserting and removing the memory card, make sure that ⑩ ALARM BUFFERING is set to "**OFF**", and then turn off the power. (p. 34)
- The PC card slot is for 16-bit 5 V cards only. Do not use 32-bit card bus types of card, as the terminal sections are different.
- New alarms cannot be received while alarm data is being moved onto the memory card.
- The camera is not equipped with a formatting function. Use the computer to format the memory card (only FAT formatting is supported).

Viewing Live Images

The initial screen (live image screen) can be accessed by starting up the computer's web browser and pointing it to the IP address for the network camera. The live image screen will then be displayed.

- **Live images will appear in the display area (①) while they are being monitored.**
 Use the camera setting screen to change setting such as the image title and iris for the images that are displayed.
- **Settings relating to the transmission of images, such as PICTURE QUALITY and RESOLUTION, are set using the drop-down list boxes in the transmission setting area (②).**
 The transmission speed will increase or decrease depending on the settings that are made here.



Note:

- If you would like to change the camera settings using the live image screen, click the mouse on the live image screen to directly display the camera setting screen.
- To view the live image screen while some other screen is being displayed, click the [LIVE VIEW] menu select button.

Viewing the View Frame Screen



Click the [VIEW FRAME] menu select button.

The menu select buttons will disappear. The live images in the view frame will be displayed at a screen size of 720x480, regardless of the screen size that has been set in the live image screen.

To return to the live image screen, click the **[BACK]** button.

Note: Even if the image size has been set to a smaller size (160x120 or 320x240), the images will still be displayed at a size of 720x480. In this case, the image resolution will appear coarser.







Playing Back Alarm Data

Alarm detection data (when an external sensor or motion detector have been set) and alarm image data is automatically recorded. Moreover, this data is also played back in the live image screen.

Playing Back Alarm Data in the Camera's Internal Memory

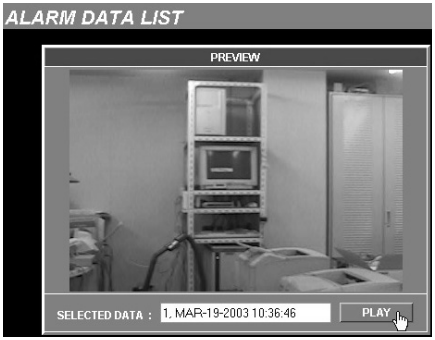
1 Click the ALARM DATA indicator (while it is green or red).

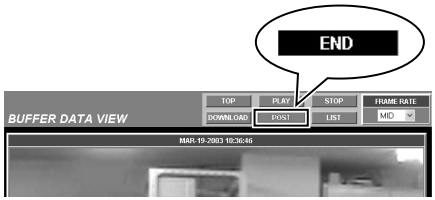
The ALARM DATA LIST screen will be displayed, and an alarm image will be displayed as a still image in the PREVIEW screen.



2 Click the [PLAY] button.

The BUFFER DATA VIEW screen will be displayed (the PRE or POST indicator will illuminate) and playback of the alarm images will start. When playback is finished, the [POST] indicator will change to [END].

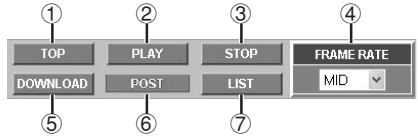




3 Click the [LIVE VIEW] menu select button.

The screen will return to the live image screen.

Descriptions of Alarm Operation Buttons



① [TOP] button

Playback returns to the beginning of the alarm data that is being played back and then waits in playback standby. You can then click the **[PLAY]** button to play back the data.

② [PLAY] button

Click this button during playback standby or when playback is paused to start playback.

③ [STOP] button

If you click this button while playback is in progress, playback will stop.

④ FRAME RATE

You can select the playback speed for alarm images using the drop-down list box. If you change the speed while alarm images are in the process of being played back, playback will start again at the selected speed from the beginning of the data.

Available settings: BASIC, MID, HIGH

Note: The actual playback speed will vary depending on the alarm data volume and the network status.

⑤ [DOWNLOAD] button

Use this button to store alarm data on the computer.

⑥ PRE/POST/END indicators

When alarm data is played back, this automatically appears as [PRE] (during pre-alarm image playback) or [POST] (during post-alarm image playback). When playback is finished, it changes to [END]. If there are no pre-alarm images, playback starts from the post-alarm images.

⑦ [LIST] button

Click this button to switch to the ALARM DATA LIST screen.

Playing Back Expansion Memory Card Images

1 Click the ALARM DATA indicator while it is red or green.

The ALARM DATA LIST screen will be displayed, and the first image that was recorded will be displayed in the PREVIEW screen.





2 Click on the alarm data to be played back, and then click the [PLAY] button.

The filename of the selected alarm data will be displayed in the SELECTED DATA box, and the message "**THE UNIT IS LOADING ALARM DATA.**" will appear briefly. When loading is complete, the BUFFER DATA VIEW screen will be displayed (the [PRE] or [POST] indicator will illuminate) and playback of the alarm images will start automatically. When playback is finished, the [END] indicator will be displayed.



Playing Back Alarm Images Stored in a Computer

Refer to p. 50 for details on saving alarm data into a computer.

1 Using Windows Explorer, click on the download destination and then double-click the "Download" folder.

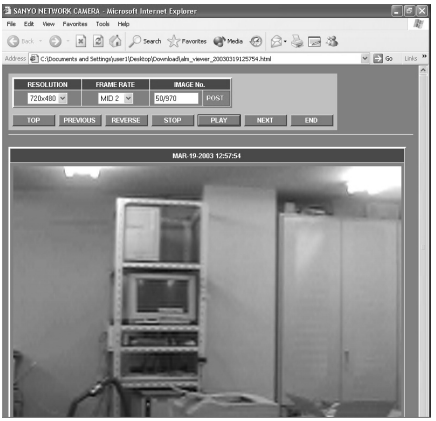
2 Double-click the "alm_viewer_XXXX.html" file.

The saved alarm data will be displayed as a still image.

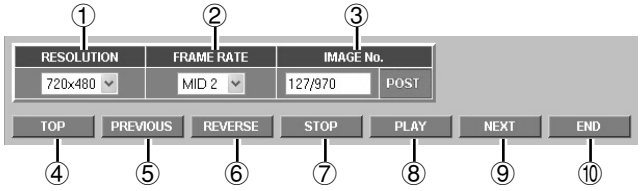
3 Click the [PLAY] button.

Playback will start. When playback is finished, the [POST] indicator will change to [END].





■ Descriptions of Alarm Operation Buttons for Saving Data to a Computer



① **RESOLUTION**

This lets you change the resolution of the images.

(Selection screen example)



② **FRAME RATE**

This sets the transmission speed for images.

Available settings: BASIC, MID 1, MID 2, MID 3, HIGH

③ **IMAGE No.**

This shows the image number.

The image number changes depending on the playback status.

④ **[TOP]**

Displays the first image in the data and also displays the first image number.

⑤ **[PREVIOUS]**

Reverses playback one frame at a time.

⑥ **[REVERSE]**

Reverses playback.

⑦ **[STOP]**

If clicked while playback is in progress, playback stops.

⑧ **[PLAY]**

Starts playback.

⑨ **[NEXT]**

Carries out playback one frame at a time.

⑩ **[END]**

Displays the last image in the data.

Alarm Data Deleting

1 **Click the ALARM DATA indicator while it is red or green.**

The ALARM DATA LIST screen will be displayed.



2 **Click the check boxes to select the alarm data to be deleted, and then click the [DELETE] button.**

The alarm data delete confirmation dialog box will be displayed.



3 **Click the [OK] button.**

The alarm data will be deleted.

Note: When deleting more than one set of alarm data at the same time, the message "**THE UNIT IS REMOVING ALARM DATA.**" will be displayed briefly, and then the selected alarm data will be deleted.



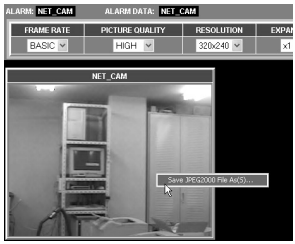
Saving Live Images and Alarm Images

■ Saving Live Images onto a Computer

The camera images that are being monitored can be saved as still images in the computer's storage area in JPEG2000 format.

1 Right-click the mouse on the image to be saved.

The images will be paused and an image save pop-up menu will be displayed.

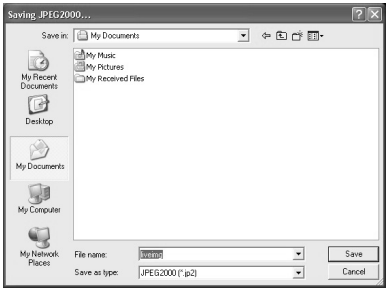


2 Click "Save JPEG2000 File As (S)...".

The Saving JPEG2000 dialog box will be displayed.

3 Type in the file name and then click the [Save] button.

The image will be saved onto the computer.



To check the saved file, check that the JPEG2000 plug-in has been installed, and then use Internet Explorer to view the image.

Note:

- When saving images into a computer, the images will be saved at the selected resolution.
- The extension used for the saved images will be "**.jp2**".

■ Saving Alarm Images onto a Computer as Still Images

Alarm images can be saved as still images in the computer's storage area in JPEG2000 format.

1 Right-click the mouse on the alarm image to be saved.

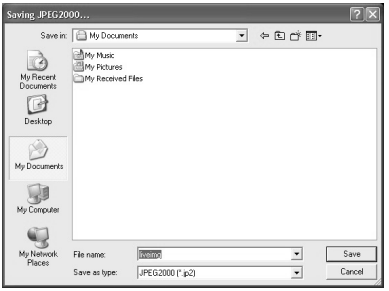
The images will be paused and an image save pop-up menu will be displayed.

2 Click "Save JPEG2000 File As (S)...".

The Saving JPEG2000 dialog box will be displayed.

3 Type in the file name and then click the [Save] button.

The image will be saved onto the computer.



To check the saved file, check that the JPEG2000 plug-in has been installed, and then use Internet Explorer to view the image.

Note:

- When saving images into a computer, the images will be saved at the selected resolution.
- The extension used for the saved images will be "**.jp2**".

Saving All of a Single Alarm Event onto a Computer

1 Click the ALARM DATA indicator while it is red or green.

The ALARM DATA LIST screen will be displayed, and the first image that was recorded will be displayed in the PREVIEW screen.



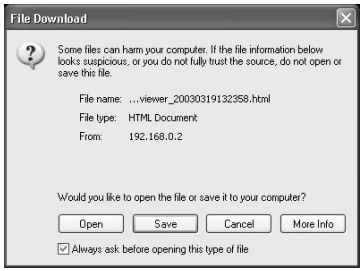
2 Click the [PLAY] button and then click the [DOWNLOAD] button.

A message will be displayed while the alarm data is being downloaded.



3 When the File Download pop-up menu is displayed, click [Save].

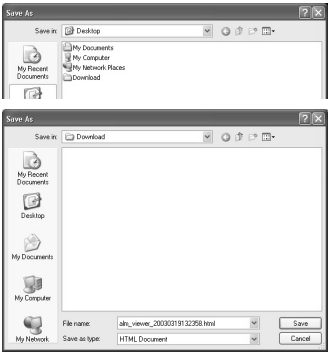
The Save As dialog box will be displayed.



4 Specify the saving destination and the filename, and then click the [Save] button.

The download will then start.

Do not close the network camera window.



5 Use Windows Explorer to open the saving destination folder.

6 Double-click the "alm_viewer_XXXX.html" file.

The download will start. When the download is finished, a message will be displayed. When this happens, click the **[OK]** button.



When you double-click the saved "**alm_viewer_XXXX.html**" file, the playback screen will be displayed. (p. 47)

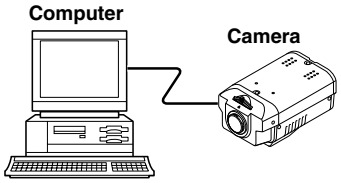
WIRELESS LAN SET Settings

ID3

Make the wireless LAN settings in the following order.

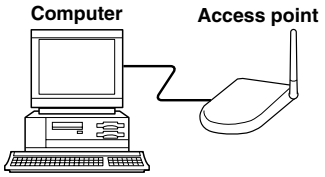
1 **Camera wired LAN settings (TCP/IP settings)**

Make sure that the settings in "**Network Camera Settings**" (p. 15) have been carried out.



2 **Wireless LAN device settings (TCP/IP settings)**

Refer to the documentation that is provided with the wireless LAN device for details. The ESS ID, transmission mode and WEP (encipherment) settings are necessary in order to complete the camera's wireless LAN settings. Take note of the settings made.



3 **Camera wireless LAN settings (TCP/IP settings)**

- Use the same ESS ID, transmission mode and WEP (encipherment) settings for the camera's wireless LAN settings as were made for the wireless LAN device. (p. 52)

Insert the wireless LAN card into the camera (Figure 1)

(1) Insert a commercially-available wireless LAN card into the camera so that it is facing in the right direction, and then fold down the knob in the direction of the arrow.

This will lock the card in place.

(2) To remove the card, push the knob in the direction of the arrow to release the card.

Note:

- Consult your local dealer for advice on purchasing a wireless LAN card.
- When a wireless LAN card as been inserted into the network camera, the camera should be used in an ambient temperature that does not exceed 40°C.

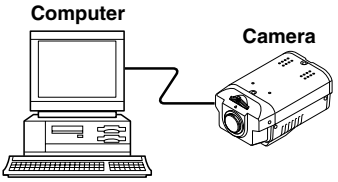
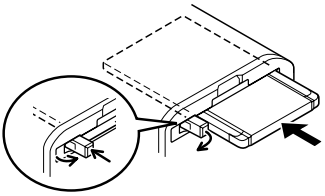
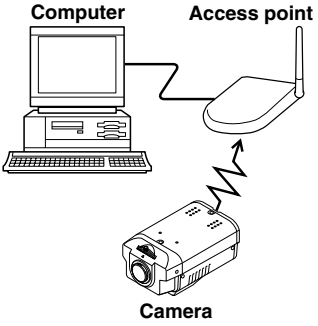


Figure 1





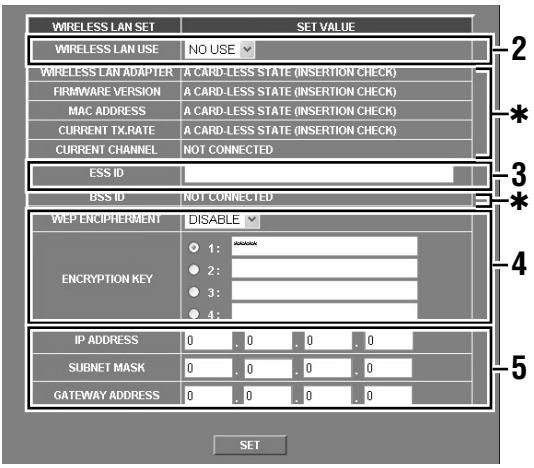
4 **Wireless LAN device settings (TCP/IP settings)**

When the settings have been completed, the images from the camera will be transmitted via the wireless LAN device and can be viewed on the computer as live images.

Camera Wireless LAN Settings



Make these settings after steps **1** and **2** on page 51 have been completed.



1 **Click the [WIRELESS LAN] menu select button.**

The WIRELESS LAN SET screen will be displayed.

2 **Select “USE” from the [WIRELESS LAN USE] drop-down list box.**

If the wireless LAN card has been inserted, the items marked with ✱ will automatically show details for the inserted card.

3 **Type in the same ESS ID that was set for the wireless LAN device.**

The ESS ID can consist of up to 32 alphanumeric characters.

4 **Set the encipherment method.**

Because the camera and the wireless LAN device communicate by means of radio waves, there is the possibility that wireless packets could be intercepted and decoded by outsiders. It is recommended that you complete the encipherment setting in order to provide greater security. (p. 53)

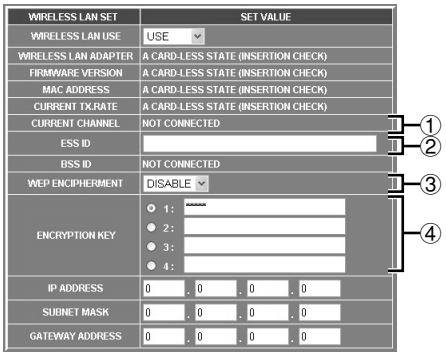
5 **Make the TCP/IP settings.**

Obtain the IP address and other information from your network systems administrator.

6 **Click the [SET] button and then turn off the power.**

Now make the settings in step 4 (wireless LAN device settings).

Description of WIRELESS LAN SET Screen



① CURRENT CHANNEL

The transmission mode (frequency channel) that was set for the wireless LAN device (access point) will be displayed here automatically.

② ESS ID

This is a verification code for transmissions sent over the wireless LAN from the camera to the wireless LAN device.

Extended Service Set-Identifier

③ WEP ENCIPHERMENT (Default setting: DISABLE)

This is a security function that encrypts the data being transmitted so that it cannot be intercepted by an unauthorized third party.

Available settings:

- **DISABLE:** Encipherment is not used.
- **WEP40 (WEP64):** The encryption key uses 40 bit (64 bit) data.
- **WEP128:** The encryption key uses 128 bit data.

* 128 bit encipherment provides a higher level of security.
* WEP: Wired Equivalent Privacy

④ ENCRYPTION KEY

Up to four types of encryption key can be set.

Rules for encryption key entry:

- **WEP40 (WEP64):** The encryption key can consist of up to 5 alphanumeric characters.
- **WEP128:** The encryption key can consist of up to 13 alphanumeric characters.

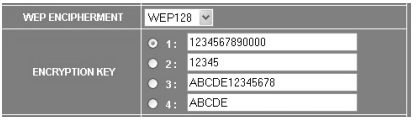
Encipherment Settings

If you do not type in the same encryption key that has been set for the wireless LAN device, communication will not be possible. Make a note of the encryption key and type it in.

Example: Encryption key 1: 1234567890000
Encryption key 2: 12345
Encryption key 3: ABCDE12345678
Encryption key 4: ABCDE

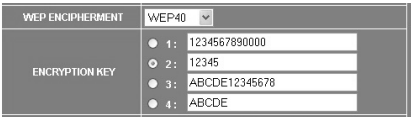
1 **If using encryption key 1 (or 3), select "WEP128" from the drop-down list box.**

2 **Click encryption key "1".**



3 **If using encryption key 2 (or 4), select "WEP40" from the drop-down list box.**

4 **Click encryption key "2".**



5 **Click the [SET] button.**

ESS ID and the encryption key for the camera and the wireless LAN device will be verified.

Note:

- If you are not using encipherment, set "**WEP ENCIPHERMENT**" to "**DISABLE**".
- If you do not type in an encryption key, the encryption key numbers cannot be selected.

PPP (Dial-up) Settings

ID3

Two types of PPP settings can be made: Connecting to an "**Internet Service Provider**" or "**Connecting from a computer**".

PPP Connection to an Internet Service Provider

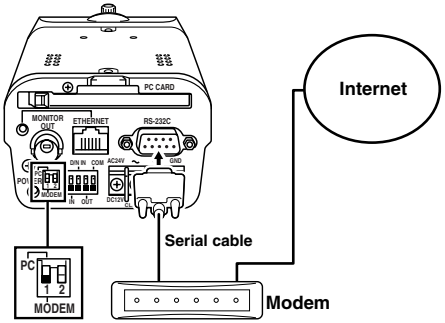
You can connect the camera to an Internet Service Provider via a telephone line and then use the separately-sold Network Archiving Software to transmit alarm images.

☞ Connecting the camera and installing the software

1 **Camera wired LAN settings (TCP/IP settings)**

Make sure that the settings in "**Network Camera Settings**" (p. 15) have been carried out.

2 **Connect a serial cable between the RS-232C terminal at the rear of the camera and a modem.**



Set pin 1 to "MODEM"

3 **Set pin 1 of the PC/MODEM select switch at the rear of the camera to the "MODEM" setting.**

Note: After moving the select switch, be sure to turn the power off and then back on again.

4 **Camera PPP settings**

Make the settings for transmitting alarm data. Refer to "**DIAL TO PROVIDER Settings**" (p. 56) for details.

Note: After making the PPP settings, close the camera setting screen.

5 **Install the Network Archiving Software onto the computer.**

Note: After installing the software, close the software window.

6 **Make the Camset settings.**

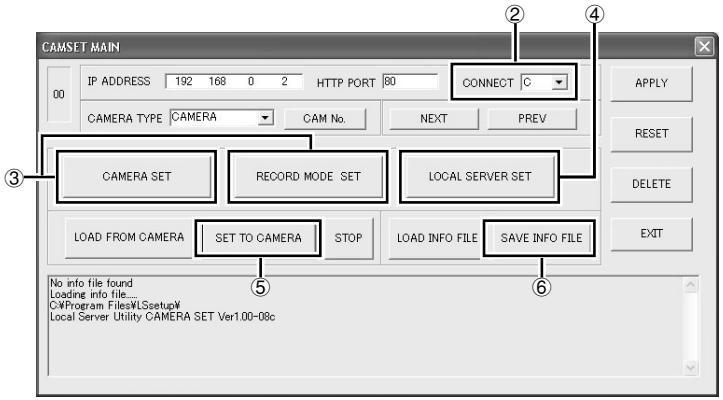
Camset only makes the settings that are required for setting up the camera. Refer to the documentation for the Network Archiving Software for further details.

① **Double-click the Camset icon on the desktop.**

When Camset is opened for the first time, no files have yet been created, so the following message will be displayed. Click the **[OK]** button. "**CAMSET MAIN**" will then be displayed.







② Set "CONNECT" to "N".

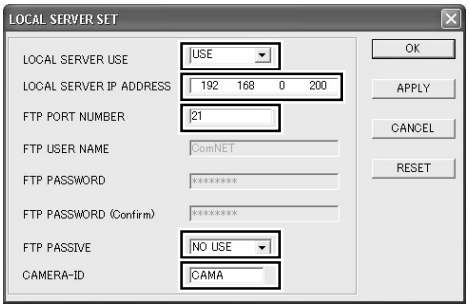


③ Click the [CAMERA SET] and [RECORD MODE SET] buttons and make the respective settings.

④ Click the [LOCAL SERVER SET] button.

The LOCAL SERVER SET screen will be displayed.

- **LOCAL SERVER USE:** Set to "**USE**".
- **LOCAL SERVER IP ADDRESS:**
 The computer that has the Network Archiving Software installed becomes a local server that can be accessed via the Internet. Type in the global IP address that has been assigned by the ISP in this case.
- **FTP PORT NUMBER:** Type in "**21**".
- **FTP PASSIVE:** Set to "**NO USE**".
- **CAMERA-ID:** Type in a unique 4-character camera name.



⑤ Click the [SET TO CAMERA] button.

The settings will be loaded into the camera.

⑥ Click the [SAVE INFO FILE] button.

The settings will be applied to the Network Archiving Software.

⑦ Close the Camset window.

Note:

- The camera cannot be accessed using the computer's web browser while the camera is connected to the modem. Use a wired LAN or wireless LAN to access the camera.
- Only alarm image data and alarm data can be transmitted by means of PPP connections.

☞ DIAL TO PROVIDER Settings



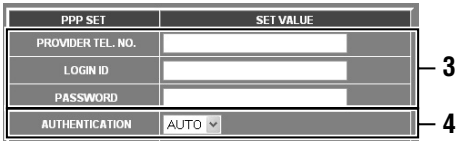
1 **Click the [PPP] menu select button.**
The PPP SET screen will be displayed.

2 **Select "USE" from the "DIAL TO PROVIDER" drop-down list box and then click the [DETAIL] button.**
The PPP SET (TO PROVIDER) screen will be displayed.



3 **Set the following items for connecting to the access point.**

- **PROVIDER TEL. NO.:**
 If you need to dial "**0**" first, type in the number as "**0-XXX**".
- **LOGIN ID:** Type in your user ID for the provider.
- **PASSWORD:** Type in your password for the provider.



4 **Select the authentication settings (AUTHENTICATION).**
This sets the authentication protocol to be used when connecting to the access point. Set this to the protocol specified by the Internet Service Provider. It should normally be set to "**AUTO**".

Available settings:

- **AUTO (default setting):** PAP or CHAP is chosen automatically as required
- **PAP:** Only PAP authentication is used.
- **CHAP:** Only CHAP authentication is used.

5 **IP address and error display**

① **AUTO IP ADDRESS:** The IP address is only displayed while the camera is connected.

② **ERROR INFO.:** Shows the most recent error information during a PPP connection.

Display details:

- Modem timeout or Not connected
- Line connection error
- Line disconnected
- PPP connection error
- PPP authentication error
- PPP connected and disconnected normally



6 **Click the [SET] button.**
The PPP SET screen will be displayed.

7 **Select the type of telephone line (CIRCUIT TYPE).**
This sets the type of telephone circuit that the modem is connecting to.

Available settings:

- **TONE:** For tone dialing circuits
- **PULSE:** For pulse dialing circuits

Note: Set to "**TONE**" if using a terminal adapter.

8 **Type in any AT commands that are required to control the modem.**



Type in "**AT**" at the beginning, and then type in the commands specified by the modem manufacturer followed by a command to change flow control to software control.

9 **Make the following settings if required.**

- **BAUD RATE:** Normally "**115200 bps**"
- **DATA SIZE:** Normally "**8 bits**"
- **PARITY:** Normally "**NONE**"
- **STOP BIT:** Normally "**1**"

BAUD RATE	115200 bps
DATA SIZE	8 bits
PARITY	NONE
STOP BIT	1

10 **Once you have finished changing the settings, click the [SET] button.**

☞ MODEM CONNECTIONS

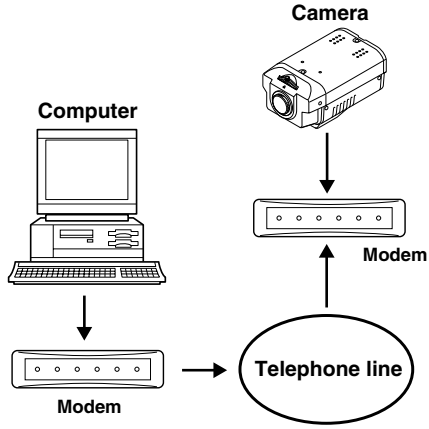
- The modem should be an RS-232C external modem that is compatible with the command set devised by Hayes Corporation of the United States.
- Large volumes of data may be transmitted depending on the alarm settings, so a high-speed modem using a protocol such as V.90 should be used.

Note: The maximum receiving speed for the V.90 protocol is 56 Kbps, but the transmission speed is 33.6 Kbps. Because of this, the maximum transmission speed for alarm data from a camera or the video server will be 33.6 Kbps, even for modems that use the V.90 protocol.

- The cameras and video server can only use software (Xon/Xoff) flow control. In may cases, the modems may be set up to use hardware (RTS/CTS) flow control. In such cases, you will need to use AT command settings to change the modem settings to software flow control.
- Modem commands consist of a single line starting with the letters "AT", followed by the commands as shown below. Generally you should issue an "AT&K4" command to switch to software flow control, but this may vary depending on the product. Refer to the specifications for the modem being used for further details on this.
 MODEM: INITIALIZECOMMAND AT&K4

■ PPP Connection from a Computer

You can use the Dial-up networking function of a computer to connect the computer to the camera via a telephone line. This method does not involve an Internet Service Provider.



☞ DIAL FROM PC Setting

1 **Click the [PPP] menu select button.**
The PPP SET screen will be displayed.

2 **Select "USE" from the "DIAL FROM PC" drop-down list box and then click the [DETAIL] button.**
The PPP SET (FROM PC) screen will be displayed.

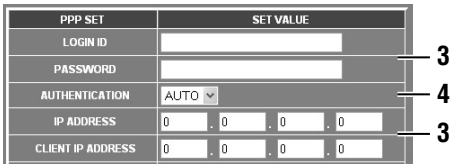
PPP SET	SET VALUE
DIAL TO PROVIDER	USE DETAIL
DIAL FROM PC	USE DETAIL

3 **Set the following items.**

- **LOGIN ID:** Type in a username of 19 characters or less to use for the dial-up networking settings on the computer.
- **PASSWORD:** Type in a password of 19 characters or less to use for the dial-up networking settings on the computer.
- **IP ADDRESS:** Type in the IP address for the camera to use during the PPP connection.

 Note:

 - The same IP address that is used for camera network settings can be typed in, but in such cases, it will not be possible to connect using the wired LAN while a PPP connection is in progress. To use both connections simultaneously, type in different subnets.
 - Do not set the IP ADDRESS and the CLIENT IP ADDRESS to the same address.
- **CLIENT IP ADDRESS:** Type in the IP address that is assigned to the computer during the PPP connection.



4 **Select the authentication settings (AUTHENTICATION).**

This sets the authentication protocol to be used when connecting to the access point. It should normally be set to "**AUTO**".

Available settings:

- **AUTO (default setting):** PAP or CHAP is chosen automatically as required
- **PAP:** Only PAP authentication is used.
- **CHAP:** Only CHAP authentication is used.

5 **Click the [SET] button.**

The PPP SET screen will be displayed.

6 **Make the settings in the PPP setting screen**

The settings method for CIRCUIT TYPE, AT comment input, BAUD RATE, DATA SIZE, PARITY and STOP BIT are the same as those given in steps 7 to 9 in "**DIAL TO PROVIDER Settings**".

Note:

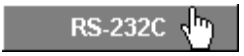
- The dial-up networking settings should also be made separately for the computer.
- When you have finished using the connection from the computer, the telephone line will not be disconnected when the browser is closed, so you will need to use dial-up networking to actually terminate the connection.

RS-232C Settings (RS-232C SET)

ID3

This sets the communication speed for the RS-232C connector of the camera when the camera is connected to a computer for maintenance and servicing.

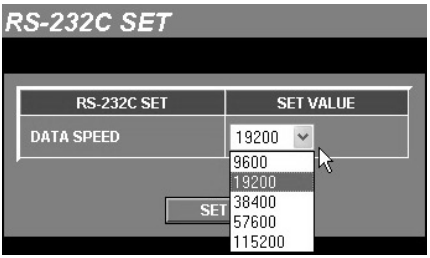
Click the [RS-232C] menu select button.



The RS-232C SET screen will be displayed. Select the communication speed from the drop-down list box, and then click the **[SET]** button. The setting will then be saved.

- The default setting for the communication speed is 19200 bps.

Note: If you click the **[LIVE VIEW]** button, the display will return to the live image screen.



LANGUAGE Selection

ID3

Click the [LANGUAGE] button to change the language.



The language selection screen will then be displayed. Once a language is selected, the language setting is stored in memory, so the language selection screen is not displayed the next times you access the camera.



STATUS Checking

ID3

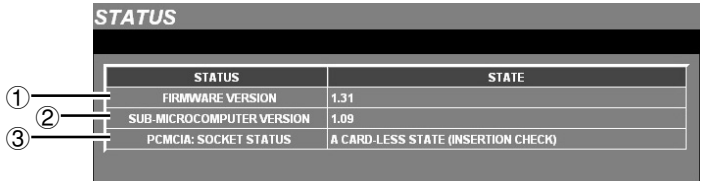
This displays information about the camera status.

Click the [STATUS] menu select button.



The STATUS screen will be displayed.

Note: If you click the **[LIVE VIEW]** button, the display will return to the live image screen.



① **FIRMWARE VERSION**

This shows the version number for the camera's firmware.

② **SUB-MICROCOMPUTER VERSION**

This shows the version number for the camera's sub-microcomputer.

③ **PCMCIA: SOCKET STATUS**

This shows the usage status for the PC card slot.

Glossary of Terms

Cookie

A system whereby a computer (HTTP server) that hosts web pages sends information that is stored by a user's computer, so that when that user visits the same web page a second time, the information that has been automatically saved is transmitted back to the HTTP server. For example, it assigns a unique number to the information from a user and remembers part of the information that the user has entered, so that next time the user accesses the web page, the same information does not need to be entered all over again.

Ethernet

There are a variety of different types of computer network. Ethernet is a type of network that was developed by Xerox Corporation.

Firewall

A firewall is like a barrier between an outside network (the Internet) and a local network (LAN). It is a security measure that is used to prevent unauthorized access to information by outsiders.

Firmware

Software that is used to operate a device.

Frame rate

This is an indication of how many times an image is refreshed in a single second when images are being displayed or moving images are being played back. If the value (fps) is large, the rate at which images are refreshed is faster, but this setting is a theoretical maximum value, and so if the images are complex, the images may be refreshed even more slowly. The set frame rate may not be attained for other reasons also, such as the image loading time and the performance of the computer being used.

FTP (File Transfer Protocol)

A protocol (communication standard) for transmitting files via the Internet. This communication protocol allows files and data to be transferred via the Web, whereas previously it was only possible using e-mail.

Hard disk

A storage device for large quantities of data that is used by equipment such as computers. It contains a flat disc that is coated with magnetic particles, and this disc spins around and a magnetized head is used to read the data stored on the disc. The data can be read at extremely fast speeds, giving it excellent data searching performance.

HTML file

An HTML file is a text file that is written in the HTML language (a language that is mainly used to create web pages). The file extensions used are .htm and .html.

IP address

A code that allocates "addresses" for each individual computer and other device on the Internet or in a network. Devices that communicate by IP all must have an IP address assigned to them. Devices that are connected to the Internet are assigned a unique global IP address so that no two devices have the same address. IP addresses consist of a network ID and a host ID, and the network ID identifies the address as Class A, B or C.

JPEG2000 (Joint Photographic Experts Group)

An image file compression standard that was formulated by the International Organization for Standardization (ISO). It provides higher compression ratios and higher quality than conventional JPEG.

LAN (Local Area Network)

A computer network that is located within a relatively small area, such as a single floor of a company building.

MAC address (Media Access Control address)

A 12-digit hexadecimal identification number that is assigned to LAN cards and LAN boards in a computer. Complex device arrangements may use IP addresses, but whereas IP addresses are assigned as required by a network system administrator, MAC addresses are burned into the LAN card at the time of manufacture. Ethernet uses the MAC address as the basis for transmission of data.

Memory

A memory device is a semiconductor device that stores digital data in units of single bits (binary digits) that consist of either 0s or 1s.

Modem

A device that converts between analog signals (from telephone lines) and digital signals (such as from computers).

Network

A variety of computers and other devices that are connected together by means of cables (wired) or via a wireless LAN so that they can exchange data with each other.

Port number

This is a number that is used to identify applications on the Internet. For example, SMTP for e-mail is normally 25 and HTTP (web-related software) is usually 80.

PPP (Point to Point Protocol)

A protocol (communication standard) that determines the process by which two points (computers) are connected across a network using telephone lines.

Resolution

This indicates the quality of images. The numbers represent the degree of detail for the images during printing or displaying, and the units used are “dpi” (dots per inch).

Router

A device that connects one network to another network. It looks up IP addresses for network devices and determines what route should be used for the information to be transmitted to and from these devices.

SMTP (Simple Mail Transfer Protocol)

A protocol (communication standard) for sending and receiving electronic mail via the Internet and Intranets. It controls the flow of mail between servers and is also used when clients send mail.

Stop bit

A symbol that is added at the end of a byte of data (8 bits) during data transmission to indicate the end of that byte.

Subnet mask

An IP address consists of a network ID and a host ID. A subnet mask is used to mask part of an IP address in order to specify whether the IP address is on a local or a remote network.

TCP/IP (Transmission Control Protocol/Internet Protocol)

A network protocol (communication standard) that was developed by the Network Project that was funded by the United States Department of Defense. It can be thought of as the communication technology that makes it possible to send and receive data over the Internet. Computers that are connected via the Internet use this protocol, and it works regardless of the type of device. Basically IP controls the sending of data in separate blocks called “packets”, and TCP receives these packets, opens them to look at their contents, and then puts all of them back together into one.

URL (Uniform Resource Locator)

A method of specifying a resource on the Internet. An example of an URL that is used to access a website on the Internet is “http://www.sanyo.com/”.

Web browser

Software that is used to view web pages. The two most commonly-used web browsers are Microsoft Internet Explorer and Netscape navigator from Netscape Communications.

Pre-alarm and post-alarm recording

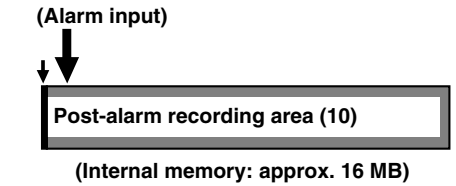
Pre-alarm and post-alarm recording involve recording data according to a selected ratio in the camera's internal memory. The default ratio is pre-alarm = 0 / post-alarm = 10. When an alarm is detected in this condition, only post-alarm images are recorded in the camera's internal memory.

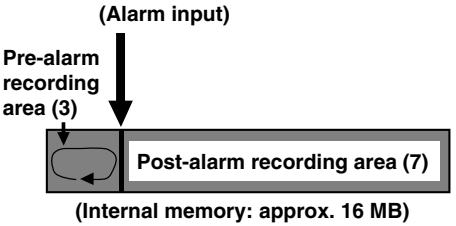
Post-alarm recording is the recording of alarm data after an alarm has been detected by an external sensor or motion detector. When an alarm is detected, the alarm data is recorded into the internal memory according to the ratio selected. If the ratio is 0/10, all of the available memory space is devoted to post-alarm recording.

Pre-alarm recording sequentially records alarm images from immediately before the alarm was detected according to the ratio selected. When an alarm is detected, images from before the alarm that fall within the amount specified by the ratio selected are recorded in the pre-alarm area of the internal memory.

For example, if the alarm recording area of the internal memory is set to a ratio of 3/7, 30% of the available area is devoted to recording images from immediately before the alarm is detected. Actual alarm images are then recorded in the remaining 70%, and the pre-alarm and post-alarm recordings are treated as a single alarm event.

When alarm images are played back, the images can be viewed continuously starting from the first images recorded immediately before the alarm was detected. The alarm recording area ratio is an important point for consideration when making settings.





Troubleshooting

If the camera cannot be connected

If the live image screen does not appear when you type the camera's IP address into the location bar of the web browser, check the following items.

- **Is the Ethernet cable connected correctly?**

If the cable is not connected correctly, the link indicator at the rear of the camera will not be illuminated. Check the cable connection.

Note: Cross-type and straight-type Ethernet cables are available. To connect the camera directly to a computer, you need to use a cross-type cable.

- **Is the link indicator flashing?**

If the link indicator is illuminated steadily, it means that the cable is connected to the camera but communication is not possible.

The default network settings for the camera are as follows.

- IP address: 192.168.0.2
- Subnet mask: 255.255.255.0
- Gateway: 192.168.0.1
- Port number: 80

If you forget the IP Address

If you forget the camera's IP address, you can check it using the following procedure.

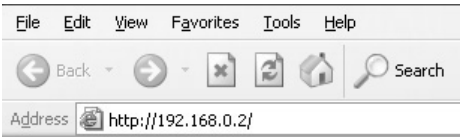
1 **Set pin 1 of the PC/MODEM select switch at the rear of the camera to the "MODEM" setting, turn off the camera's power, wait three seconds or more and then turn the power back on.**

2 **Set pin 1 of the PC/MODEM select switch at the rear of the camera to the "PC" setting, turn off the camera's power, wait three seconds or more and then turn the power back on.**

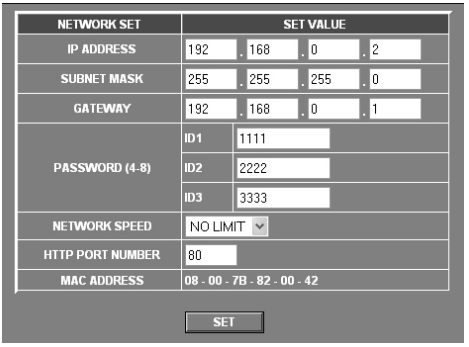
3 **Set the computer's IP address to "192.168.0.∗".**

Enter a spare number that is 3 or greater as the host address.

4 **Start the web browser and point it to "http://192.168.0.2/".**



5 **Check the network settings. (p. 20)**



6 **Turn on and off the camera's power.**

7 **Return the computer's IP address to its original setting.**

Note:

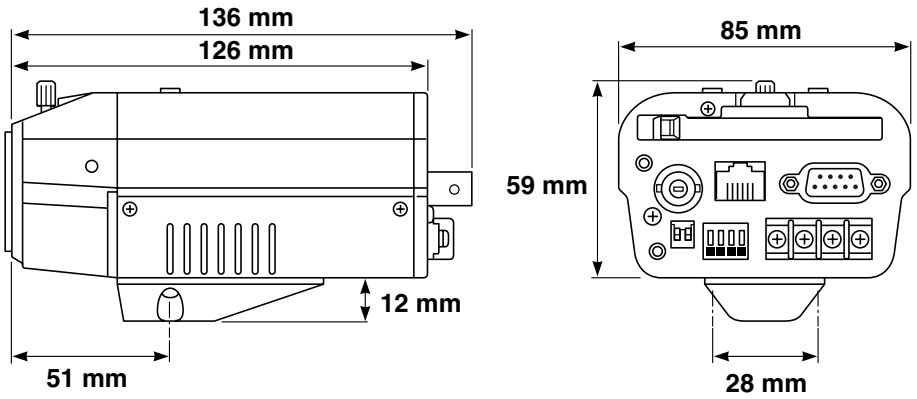
- If the password for the Administrator level ID has been changed, be careful not to forget the password.
- Check that none of the other devices that are connected to the network have a duplicate IP address of "192.168.0.2".

Specifications

Lens	: CS mount
Picture element	: 1/3 inch 420,000 pixel CCD
Effective pixels	: 768 (H) x 494 (V)
Minimum object illumination	: 0.6 lx (F1.2, color mode), 0.03 lx (F1.2, B/W mode)
White balance	: AUTO/INDOOR/OUTDOOR/MANUAL manually selectable
Electronic shutter	: 1/60 to 1/10000 sec.
Automatic iris	: DC drive, 4-pin
ALARM IN terminal	: 1 (Normal open: Non-voltage make contact; Normal close: Non-voltage break contact)
ALARM OUT terminal	: 1 (Motion detector and external input AND/OR output function, open collector: 18 V, 25 mA)
D/N IN terminal	: Day/night external switching input
Resolution	: 720 x 480, 720 x 240, 640 x 480, 320 x 240, 160 x 120 pixel
Compression method	: JPEG2000
Picture quality (compression ratio)	: BASIC (Rough), MID 1 (low), MID 2 (medium), MID 3 (high), HIGH (maximum)
Image transfer speed	: Max. 30 fps (640 x 480 pixels)
Monitor output	: Composite video output
Interfaces	
● **Ethernet connector**	: 10/100 Base-T (RJ-45)
● **RS-232C connector**	: D-Sub 9-pin
● **PC card slot**	: PCMCIA Type II (5 V power supply only)
Pre-/post-alarm buffer	: 16 MB
Protocols	: TCP/IP, PPP, FTP, HTTP
Software	: Plug-in browser (Internet Explorer compatible)
Clock backup	: 8 hours
Operating conditions	
● **Temperature**	: –10 ~ +50°C
● **Humidity**	: 90% R.H. or less
Power supply	: AC 24 V/DC 12 V
Power consumption	: 11 W
Weight	: Approx. 480 g

Specifications

Dimensions



Appearance and specifications are subject to change for improvement without notice.



Printed on recycled paper

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L5AM2/XE (0603KP-CZ)

SANYO Electric Co., Ltd.

Printed in Japan